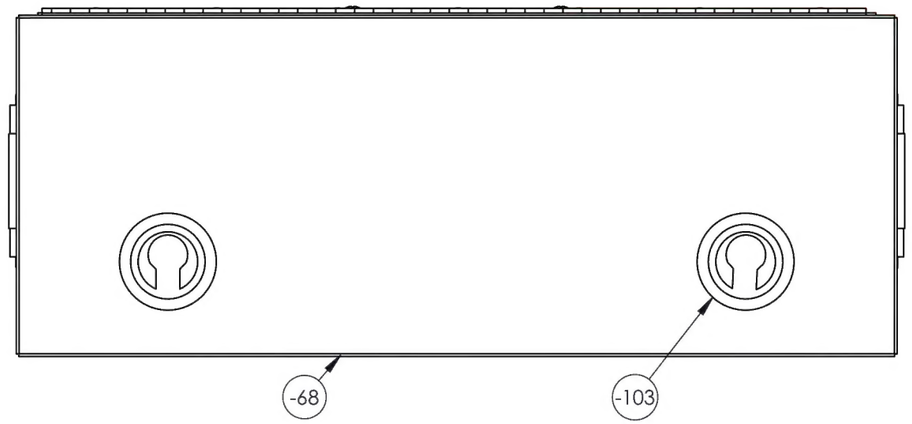
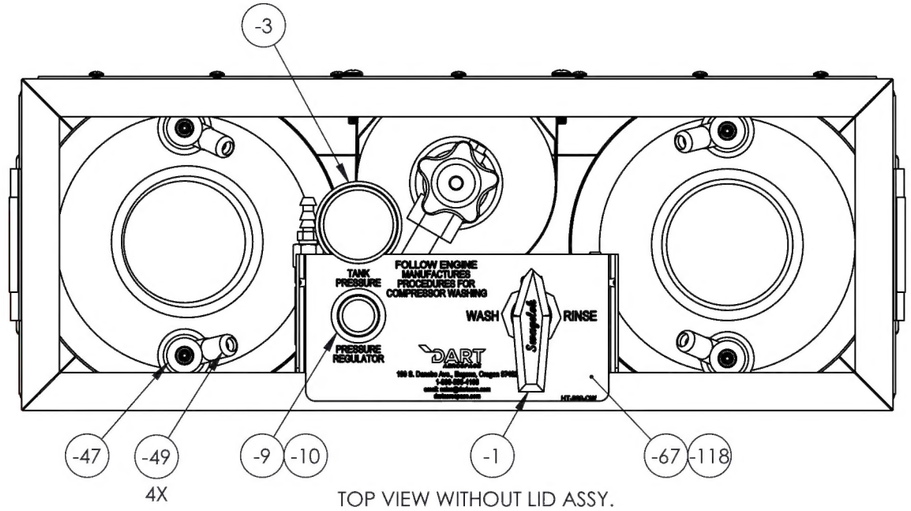
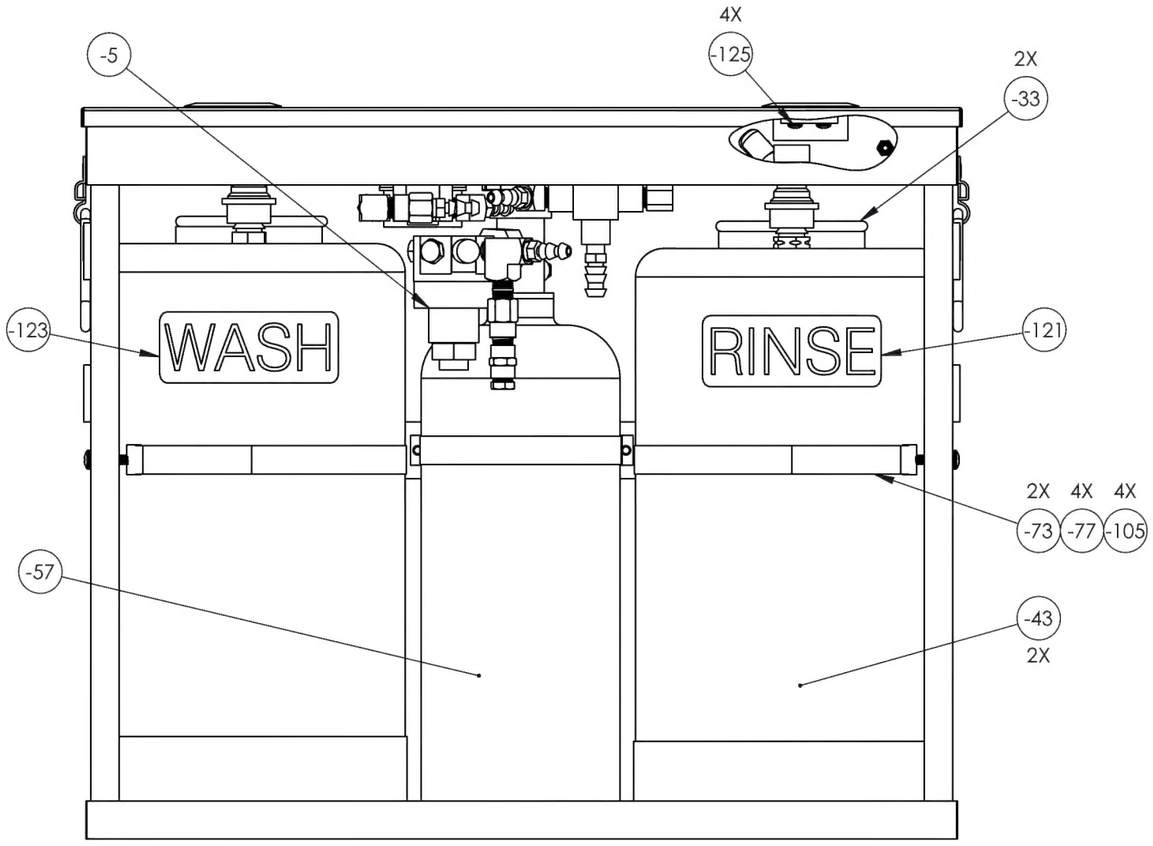
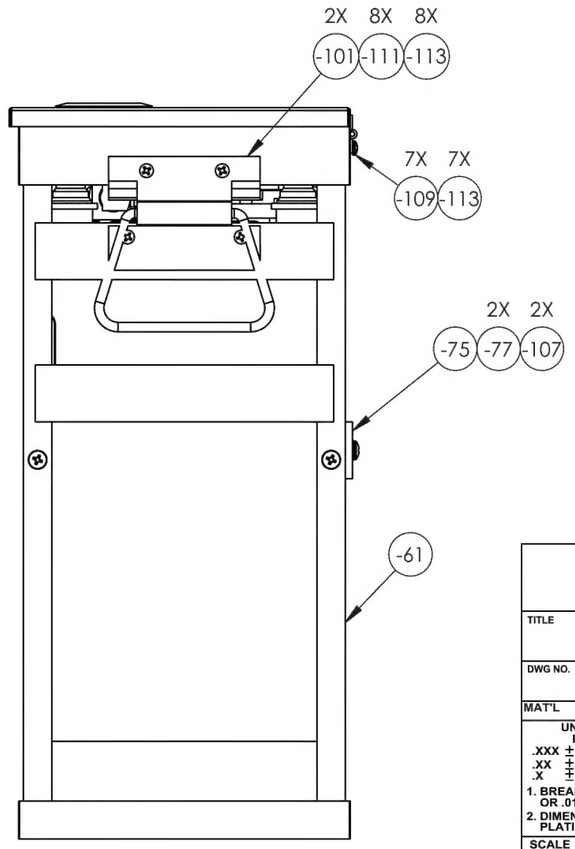
SEE ATTACHED DEVIATION





TOP VIEW WITHOUT LID ASSY.





DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW
REV	6
MAT'L	
DRAWN BY:	CLOUGH
APPROVED	D Weil
HEAT TREAT	
FINISH	
SPEC	
USED ON MODEL	
SCALE	1:4
DATE	10/15/2014
SHEET	1 OF 29

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

SEE ATTACHED DEVIATION

ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			B/O	-1	1	WHITNEY 3-WAY BALL VALVE		NORTHWEST FLUID #B-44XF4	1, 3
			B/O	-3	1	DRY PRESSURE GUAGE 1/8in. BOTTOM MOUNT		2in. 100psi MAX PARAMOUNT SUPPLY #0529826	1, 3
			B/O	-5	1	GAS CYLINDER REGULATOR		FOXX EQUIP. NORGREN #03G07126	3
			B/O	-7	3	MALE TO FEMALE CHECK VALVE	BRASS	1/4 in. AOP TECH. #410-4M4F-B	3
			B/O	-9	1	REGULATOR	METAL	1/4 in. ARROW SUPPLY #R-162	3
			B/O	-10	1	RING	PLASTIC	ARROW SUPPLY #PK1611 (FOR -9 REGULATOR)	3
			B/O	-11	2	90° ELBOW	BRASS	1/4 in. PACIFIC RUBBER #PAR2202P-4-4	3
			B/O	-13	1	CLOSE NIPPLE	BRASS	1/4 in. PACIFIC RUBBER #PAR215PNP-4	3
			B/O	-15	1	LIGHT COUPLING	BRASS	1/4 in. PACIFIC RUBBER #PAR207P-4	3
			B/O	-17	1	RUN TEE	BRASS	1/4 in. PACIFIC RUBBER #PAR2225P-4	3
			B/O	-19	1	MALE BRANCH TEE	BRASS	1/4 in. PACIFIC RUBBER #PAR2224P-4	3
			B/O	-21	2	45° ST ELBOW	BRASS	1/4 in. PACIFIC RUBBER #PAR2214P-4-4	3
			B/O	-23	1	HEX HEAD PLUG	BRASS	1/4 NPT PACIFIC RUBBER #PAR218P-2	3
			B/O	-25	4	HEX HEAD PLUG	BRASS	#6 MALE JIC PACIFIC RUBBER #PAR218P-4	3
			B/O	-27	6	MALE PUSH LOCK ADAPTER	BRASS	1/4 X 1/4 PACIFIC RUBBER #NWH PM4-4	3
			B/O	-29	1	MALE PUSH LOCK ADAPTER	BRASS	3/8 X 1/4 PACIFIC RUBBER #NWH PM6-4	3
			B/O	-31	1	CO2 INLET NIPPLE	BRASS	1/4 NPT MALE X 2 in. AIRGAS #CGA-320	3
			B/O	-33	2	TANK CAP O-RING	RUBBER	AOP TECH VITON #5-797V884-75 FOR TRANS FLUID	1
			B/O	-35	4	O-RING	RUBBER	VITON CHRISTOPHER SEALS #V75-007	5
			B/O	-37	4	0-RING	RUBBER	VITON CHRISTOPHER SEALS #V75-008	4
			B/O	-39	4	O-RING	RUBBER	VITON CHRISTOPHER SEALS #V75-111	5
			B/O	-41	4	O-RING	RUBBER	VITON #V75-013	4
			B/O	-43	2	3 GAL FLUID TANK	S.S	TOMARK #29748, CONF. W/#39567P	1
			B/O	-45	2	WHITE QUICK DISCONNECT		FOXX EQUIPMENT #07C07-138	1, 4
			B/O	-47	2	BLACK QUICK DISCONNECT		FOXX EQUIPMENT #07C07139	1, 4
			B/O	-49	4	FERRULE, OVER 1/4 LOLA @ DISCONNECTS	S.S.	FOXX EQUIPMENT #06E04-147	1
			B/O	-51	1	DIP TUBE (FOR 3 GAL. TANK)	S.S.	TOMARK INDUSTRIES #39327	5
			B/O	-53	1	GAT4LOLA HOSE		Ø1/4 ID X 3-1/2 ft PACIFIC RUBBER #3284-2501	
			B/O	-55	1	GAT6LOLA HOSE		Ø3/8 ID X 15 ft PACIFIC RUBBER #3284-1101	
			B/O	-57	1	CO2 TANK #5 EMPTY	ALUMINUM	FOXX EQUIP. #01F05103	1
			B/O	-59	4	O-RING	RUBBER	VITON CHRISTOPHER SEALS #V75-109	5
		X		-61	1	WELDED FRAME ASSEMBLY			6
		1		-63		CONTROL PANEL	5052	.080 X 4 X 11-1/4	7
		2		-65		LID LATCH MOUNT	6061	1/4 X 3/4 X 1-5/8	8
				-67	1	CONTROL PANEL PLAQUE	PLASTIC	1/16 X 4 X 8 MULTI-CRAFT PLASTICS #LM922402	9
	X			68	1	LID ASSEMBLY			10
X	1			68A		LID WELDMENT			11
1				-69		LID	BRUSHED S.S. 304-4B	.036 X 10 X 24-1/4	12
4				-70		CORNER CLIP	BRUSHED S.S. 304-4B	.036 X 3/8 X 1-1/4	13
	1			-71		LID HINGE	S.S.	1in. FLAT X 21-3/4 R&S INDUSTRIAL SUPPLIES	10
				-73	2	TANK STRAP	S.S	.030 X 3/4 X 25-1/4 PACIFIC RUBBER #BANC206	14
				-75	1	CO2 CYLINDER STRAP	S.S	.030 X 3/4 X 18-1/2 PACIFIC RUBBEER #BANC206	15
			B/O	-77	6	BARREL NUT	STEEL	1/4-20 X .786 J&S #JCD14202010	1
		2		-81		TOP SIDE RAILS	6063 ARCH.	1/8 X 1 X 2 X 8-7/8	16
		1		-83		BACK TOP RAIL	6063 ARCH.	1/8 X 1 X 2 X 23	17
		1		-85		FRONT TOP RAIL	6063 ARCH.	1/8 X 1 X 2 X 23	18
		4		-87		VERTICLE SUPPORTS	6061 SQ. CORNER	1/8 X 3/4 X 3/4 X 19-1/8	19
		2		-89		BOTTOM FRONT AND BACK RAILS	6063 ARCH.	1/8 X 1 X 2 X 23	20
		2		-91		BOTTOM SIDE RAILS	6063 ARCH.	1/8 X 1 X 2 X 8-3/4	21
		2		-93		BOTTOM PLATES	6061	1/8 X 2 X 4-3/4	22
		4		-96		SIDE BARS	6061	3/16 X 1-1/2 X 8	24
		1		-99		BACK BAR	6061	3/16 X 1-1/2 X 22-1/4	25
			B/O	-101	2	CHEST HANDLE	STEEL	ESSENTRA #NSH-220	1
			B/O	-103	2	TOP FLUSH PULL LATCH	PLASTIC	ICO RALLY, (SOUTHCO #M1-61)	1
			B/O	-105	4	PAN HEAD MACHINE SCREW	S.S.	1/4 X 20 X 1-1/2 MCMASTER-CARR #91735A546	1
			B/O	-107	2	PAN HEAD MACHINE SCREW	S.S.	1/4-20 X 1-1/4 MCMASTER-CARR #91735A544	1
ASSY -68A	ASSY -68	ASSY -61							

REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		LID LENGTHENED BY 1/16 TO ALLOW FOR ADEQUATE CLEARANCE .	3/5/02		
2		MERGED SIX FILES INTO ONE, INSTALLED NEW BOM & REVISION LOG. RE-FORMATTED ENTIRE FILE, ADDED Pg. 1, 6, 7 & 10. ALSO ADDED -68 LID ASSSEMBLY, AND SEVERAL MISSING ITEMS. DELETED -97 FOR TWO MORE -95.	11/7/07	WP	RW
3		ADDED WASH & RINSE LABEL DWG.'S.	12/27/07	WP	RW
4		CH'D HANDLE HOLE POSITION -95 TO MATCH NEW HANDLES. OLD HANDLES ARE UNAVAILABLE.	4/26/10	WP	RW
4A		CH'D BOM INFORMATION FOR -3, -33, & -103 PER B.R.	9/3/10	RJC	RW
4B		REPLACED **-9** FROM ARROW #R-162; W/#PK1611 NUT PER R.W.	1/17/12	RJC	RW
5		**-81** CH'D HANDLE NOTE FROM 1.870 TO 1.75 MUST MATCH HANDLES -101. CH'D HOLE LOCATIONS FROM .43 TO .375. REPLACED LOWER **-95** W/O HOLES WITH 2 **-96** TO BOM & DELETED 2 **-95**. **-95** CH'D HOLE LOCATIONS FROM .435 TO .375 & 2.750 TO 3.00, ADDED MISSING Ø.234 DIM.	2/7/13	RJC	GE
5A		CH'D TITLEBLOCK FROM HELI TECH TO RED BARN. CH'D PLACARD FROM HELI TECH TO DART AREOSPACE.	9/5/13	RJC	RW
6	14-0161	CH'D B/O INFO **-33** P/N WAS V0884 5-979 IS VITON #5-979V884-75, **-49** P/N WAS F-475-A IS 06E04-147. **-53** CH'D B/O INFO WAS LOLA HOSE IS GAT4 LOLA HOSE & ADDED P/N PACIFIC RUBBER #3284-250. **-55** CH'D B/O INFO WAS LOLA HOSE IS GAT6 LOLA HOSE & ADDED P/N PACIFIC RUBBER #3284-1101. **-67** CH'D MATERIAL LENGTH WAS 1-1/2 IS 1-5/8, **-69** & **-70** CH'D MATERIAL WAS .034 IS .036,-**70** CH'D QTY WAS 1 IS 4, **-73** CH'D DESCRIPTION WAS TANK STRAPPING IS TANK STRAP. **-75** CH'D DESCRIPTION WAS CYLINDER STRAPPING IS CO2 CYLINDER STRAP. **-77** ADDED P/N J&S #14202010. **-81**, **-83**, **-85**, **-87**, **-89**, **-91** CH'D MATERIAL WAS 6061 IS 6063 ARCHITECTURAL. **-81** CH'D LENGTH WAS 8-3/4 IS 8-7/8. **-87** CH'D LENGTH WAS 19 IS 19-1/8. **-96** CH'D LENGTH WAS 8-1/8 IS 8, AND CH'D QTY WAS 2 IS 4 (SEE REV 5), **-99** CH'D LENGTH WAS 22-1/8 IS 22-1/4, **-101** CH'D VENDOR WAS REID IS ESSENTRA, **-117** DELETED AND ADDED ONE MORE -25 FOR TOTAL OF 4, **-118** CH'D P/N WAS 6JT61 IS 24A686, **-119** CH'D PLACARD FROM HELITECH TO DART RB41011, **-125** CH'D FROM STEEL TO S.S. ADDED SEPARATE SHEETS 4 & 5 TO SHOW MODIFICATIONS. **-61** ADDED DRILL HOLES AFTER WELDING TO MATCH -101 AND DELETED DIMS FOR HOLE PLACEMENT. **-67** ADDED EMAIL TO EMAIL ADDRESS. -**68A** ADDED LID WELDMENT DWG. **-69** & **-70** CH'D DIM WAS .034 IS .036. **-75** CH'D DESCRIPTION WAS CYLINDER STRAPPING IS CO2 CYLINDER STRAP. **-81** REMOVED Ø.234 HOLES AND MOVED TO -61 CH'D HOLE DIA. TO .221. **-87** CH'D HOLE WAS Ø.312 IS .281. **-95** REMOVED Ø.234 HOLES AND ADDED TO -61 CH'D DIA TO .221. **-99** CH'D HOLE WAS 2X Ø.312 IS 2X Ø.281.	10/27/2014	RJC	JAG

ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			B/O	-109	7	PAN HEAD MACHINE SCREW	S.S.	#10-24 X 1/2 MCMASTER-CARR #91735A242	1
			B/O	-111	8	FLAT HEAD MACHINE SCREW	S.S.	#10-24 X 5/8 MCMASTER-CARR #91771A244	1
			B/O	-113	15	NYLON LOCK NUT	S.S.	#10-24 MC MASTER-CARR #90715A011	1
			B/O	-115	1	ENG. HOSE END FITTING	BRASS	FEM. JIC 37° SWIVEL PACICFIC RUBBER #NWHJF6-6	1
			B/O	-118	1	DOUBLE SIDED TAPE (FOR -67)	POLYPROPLENE	4mil X 1 GRAINGER #24A686	1
	1		B/O	-119		DART PLACARD	ALUMINUM	#RB41011	10
			B/O	-121	1	RINSE LABEL	PLASTIC	SIGNS NOW	26
			B/O	-123	1	WASH LABEL	PLASTIC	SIGNS NOW	27
			B/O	-125	4	PAN HEAD MACHINE SCREW	S.S.	10-24 X 1/4 MCMASTER-CARR #91772A238	1
ASSY -68A	ASSY -68	ASSY -61							

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO.: HT-300-CW | REV: 6

MAT'L | DRAWN BY: CLOUGH

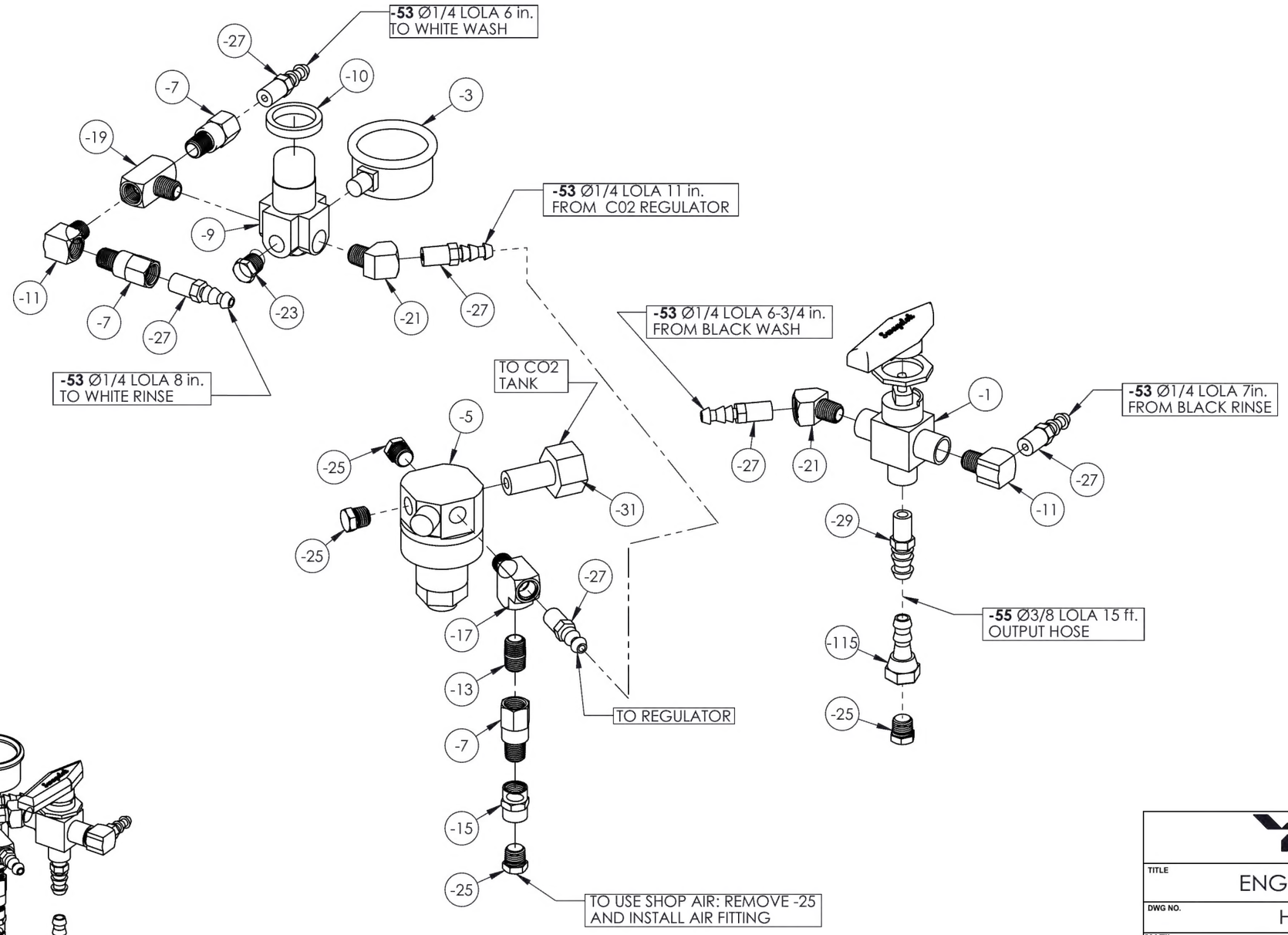
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

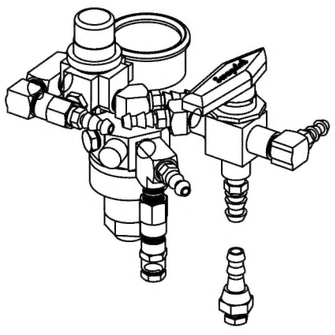
APPROVED: D Weil
HEAT TREAT
FINISH
SPEC
USED ON MODEL

SCALE 1:4 | DATE 10/15/2014 | SHEET 2 OF 29

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-117** DELETED AND ADDED ONE MORE -25.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION





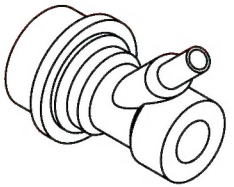
PLUMBING DIAGRAM

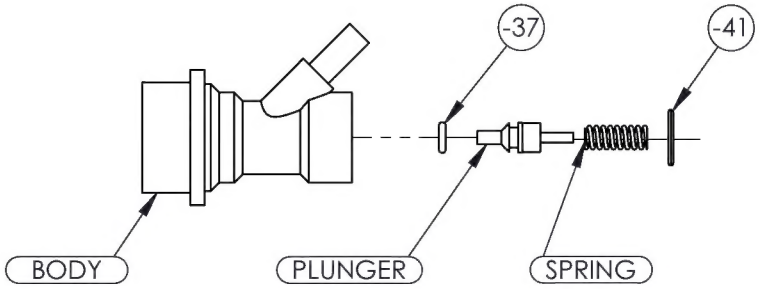
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW
REV	6
MAT'L	
DRAWN BY:	CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1	
APPROVED	D. Weil
HEAT TREAT	
FINISH	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:3	DATE 10/15/2014
SHEET 3 OF 29	

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	ADDED SEPARATE SHEET TO SHOW MODIFICATION.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION





-43 TANK FITTING MODIFICATIONS
-45 WHITE AIR INTAKE QUICK DISCONNECT
-47 BLACK FLUID OUT QUICK DISCONNECT

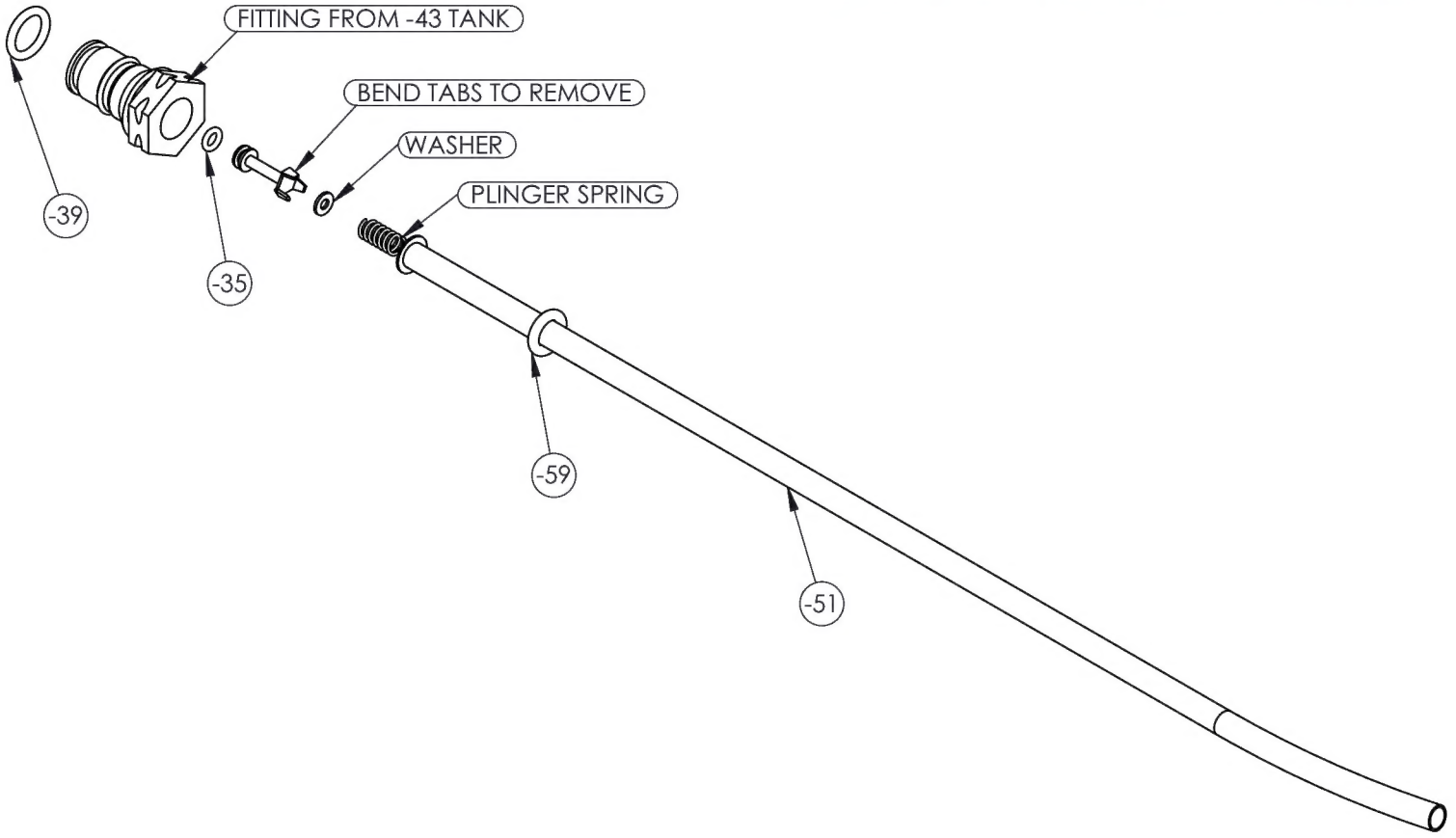
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW
REV	6
MAT'L	
DRAWN BY:	NELSON
APPROVED	D Weil
HEAT TREAT	
FINISH	
SPEC	
USED ON MODEL	
SCALE	1:2
DATE	7/15/2014
SHEET	4 OF 29

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	ADDED SEPARATE SHEET TO SHOW MODIFICATION.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION



REPLACE SHORT TUBE WITH -51 DIP TUBE IN WASH TANK ONLY INLET SIDE.

DART AEROSPACE

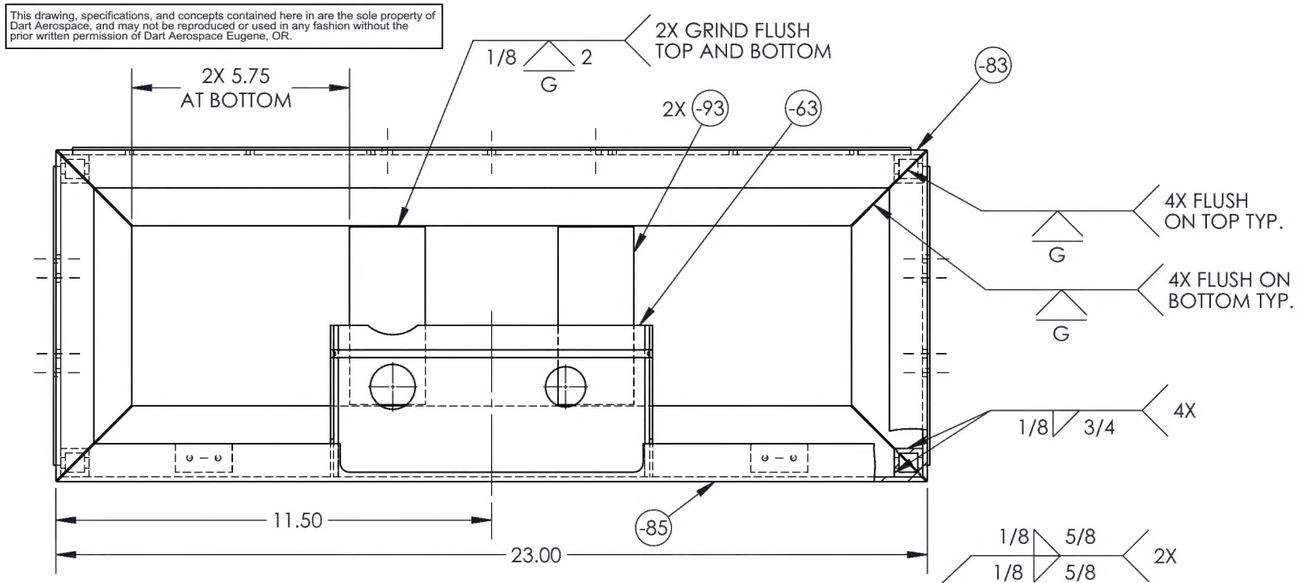
TITLE	ENGINE WASHER
DWG NO.	HT-300-CW
REV	6
MAT'L	
DRAWN BY:	CLOUGH
APPROVED	D Weil
HEAT TREAT	
FINISH	
SPEC	
USED ON MODEL	
SCALE	1:2
DATE	10/27/2014
SHEET	5 OF 29

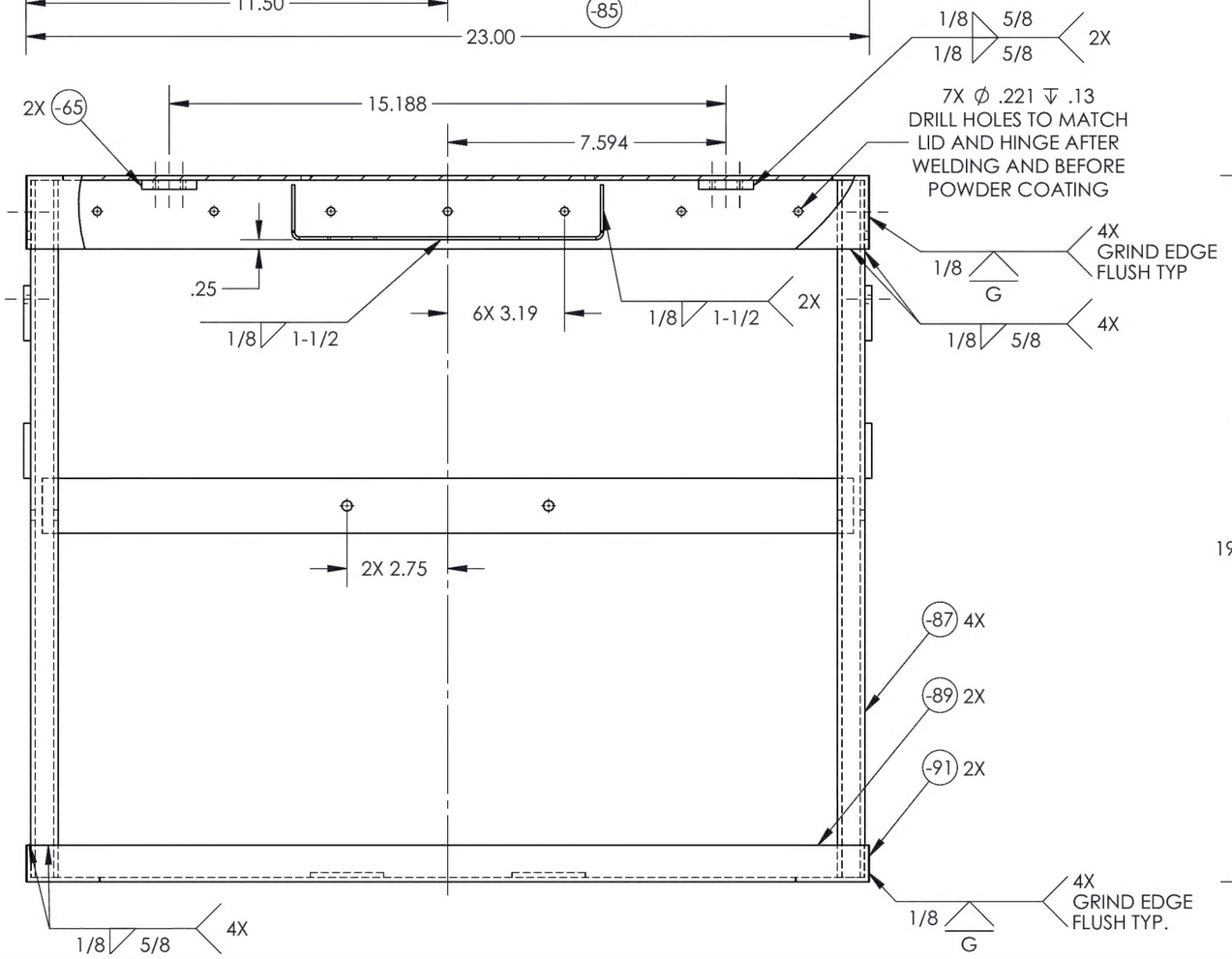
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4		CH'D HANDLE HOLE POSITION -95 TO MATCH NEW HANDLES. OLD HANDLES ARE UNAVAILABLE.	4/26/10	WP	RW
5	14-0161	**-61** ADDED DRILL HOLES AFTER WELDING TO MATCH -101 AND DELETED DIMS FOR HOLE PLACEMENT.	10/27/2014	RJC	JAG

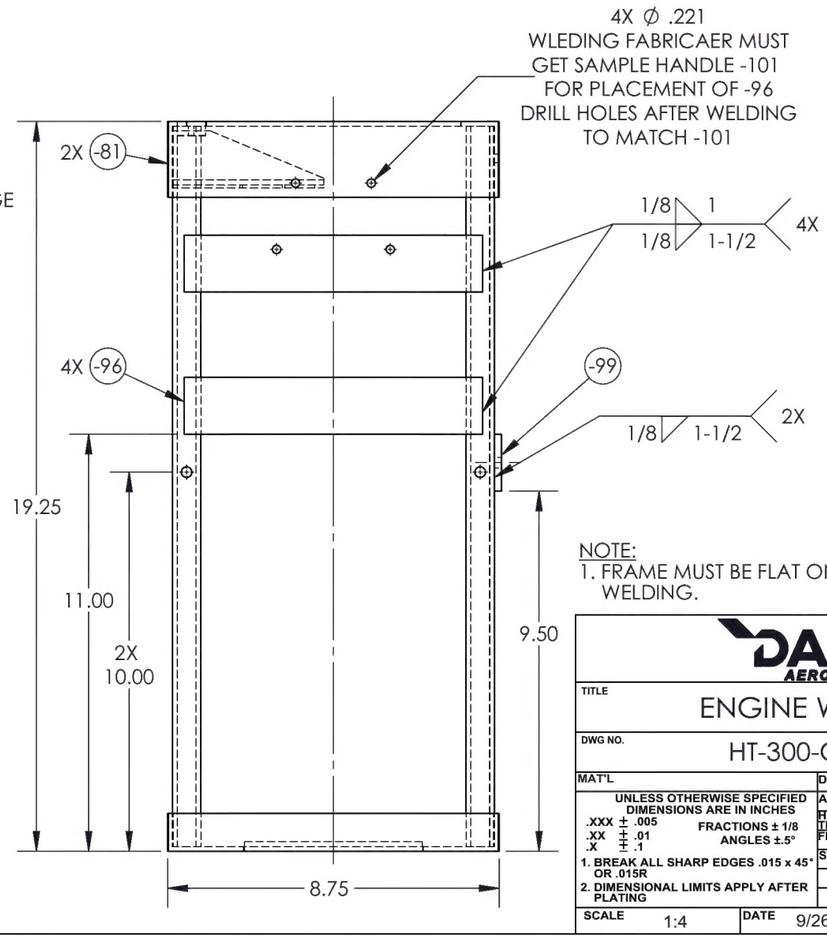
SEE ATTACHED DEVIATION





-61

WELDED FRAME ASSY



NOTE:
1. FRAME MUST BE FLAT ON BOTTOM AFTER WELDING.

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO.: HT-300-C W-61 | REV: 6

MAT'L:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1

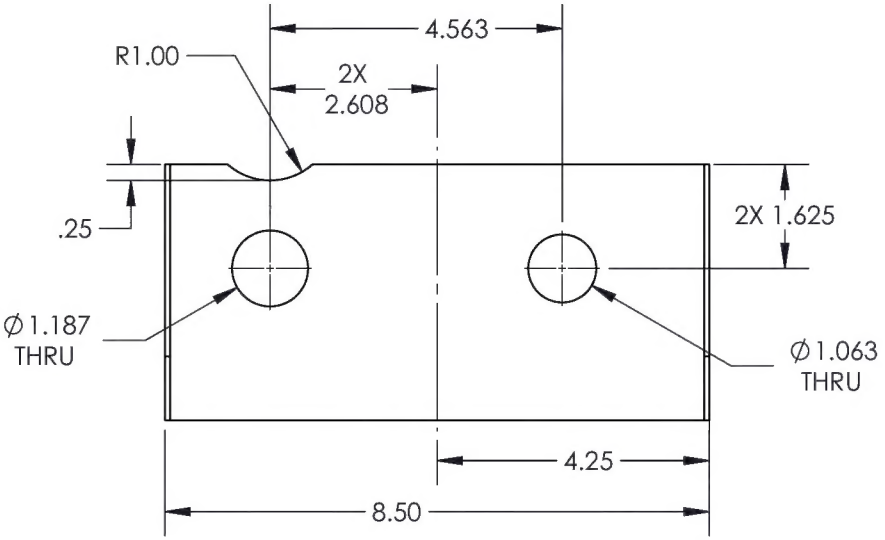
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

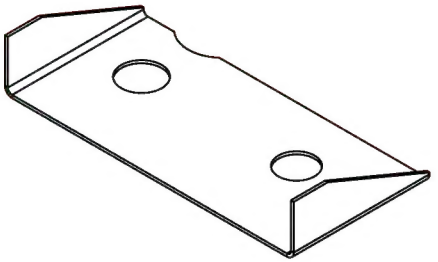
DRAWN BY: CLOUGH
APPROVED: D Weil
HEAT TREAT:
FINISH: POWDER COAT YELLOW
SPEC: FED #13538
USED ON MODEL:

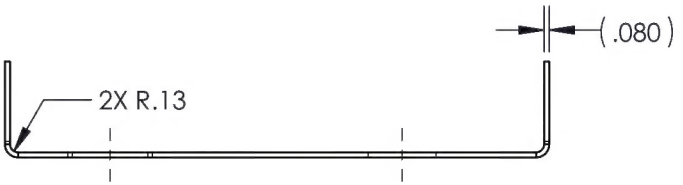
SCALE: 1:4 | DATE: 9/26/2014 | SHEET 6 OF 29

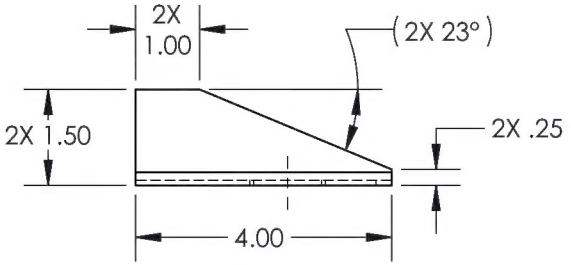
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

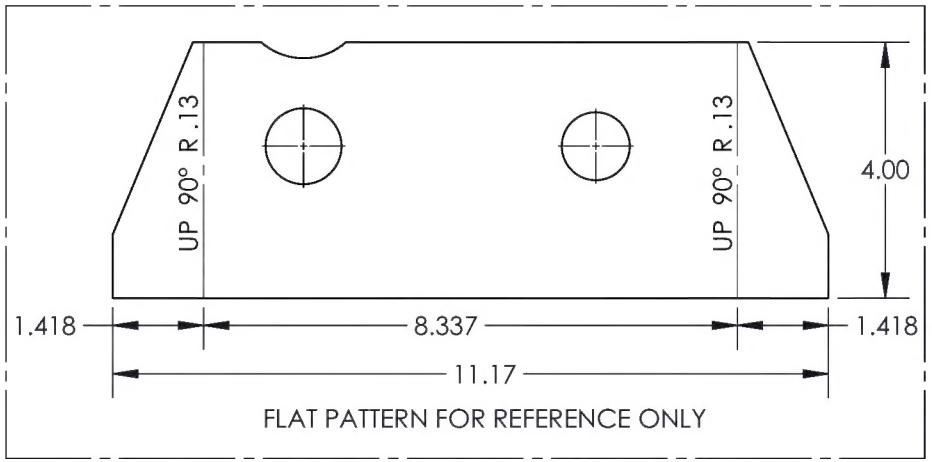
SEE ATTACHED DEVIATION











(-63)

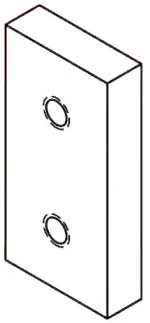
CONTROL PANEL

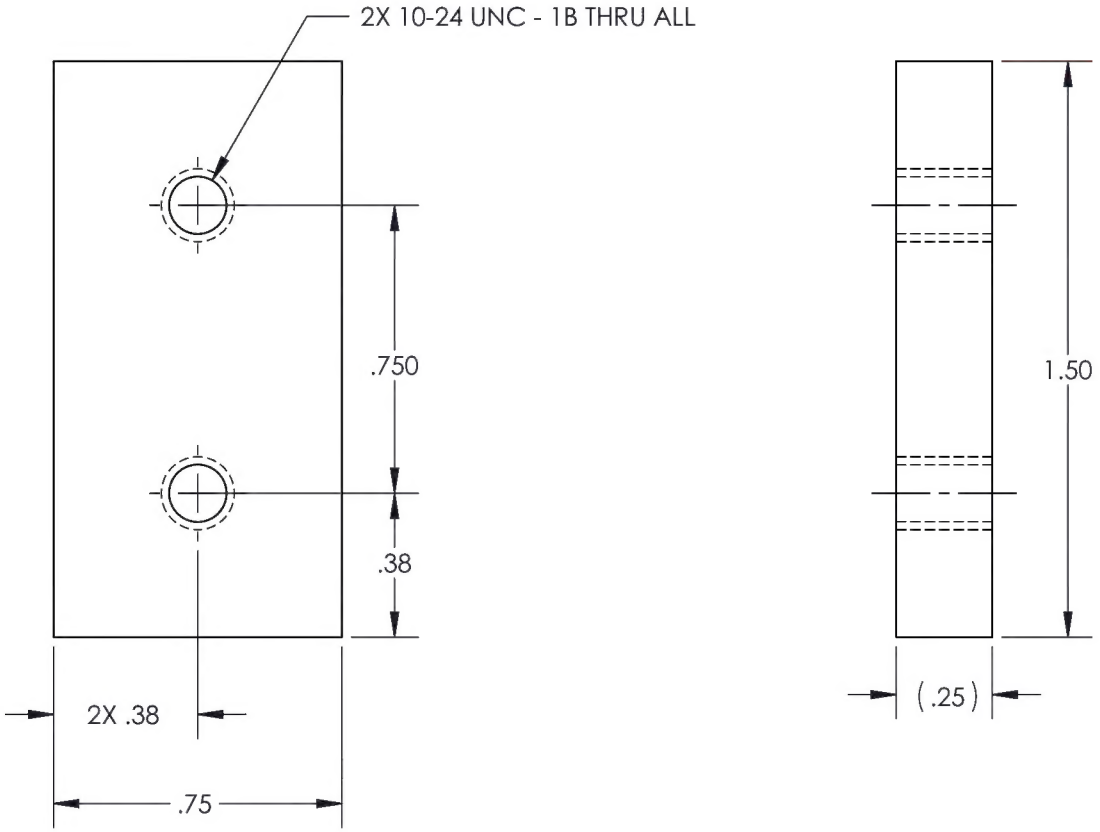
DART AEROSPACE

TITLE	ENGINE WASHER		
DWG NO.	HT-300-CW-63	REV	6
MAT'L 5052		DRAWN BY:	CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .010 FRACTIONS ± 1/8 .XX ± .03 ANGLES ±.5° .X ± .1		APPROVED	D Weil
		HEAT TREAT	
		FINISH	SEE -61 WELDMENT
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		SPEC	
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		USED ON MODEL	
SCALE 1:3	DATE 9/25/2014	SHEET 7 OF 29	

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

SEE ATTACHED DEVIATION





-65

LID LATCH MOUNT

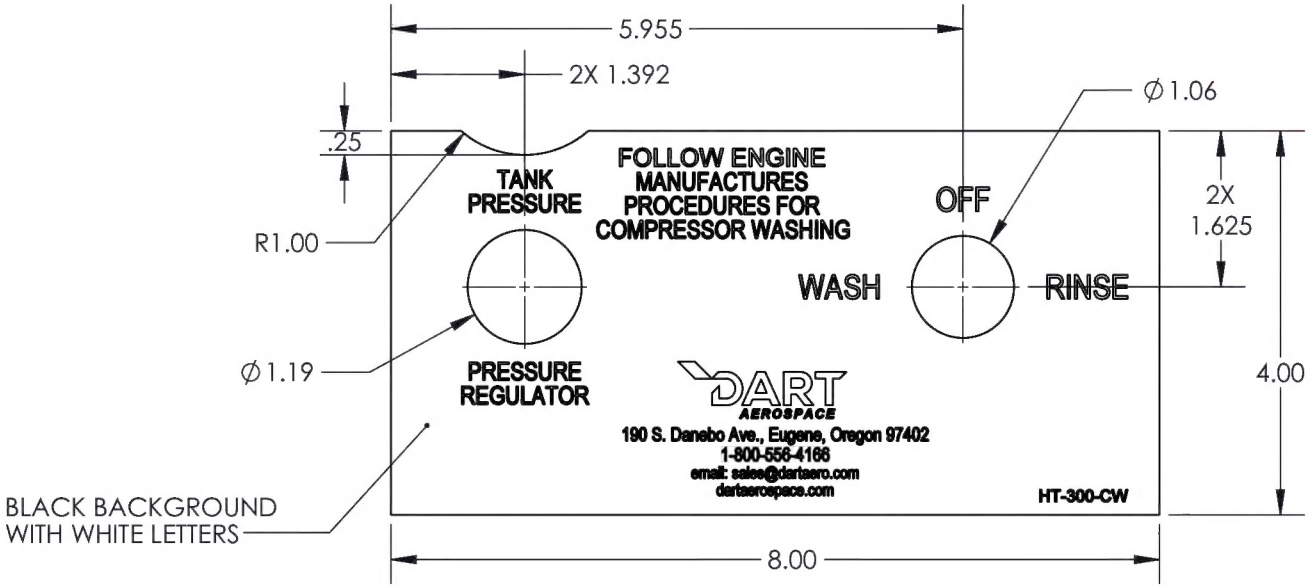
DART AEROSPACE

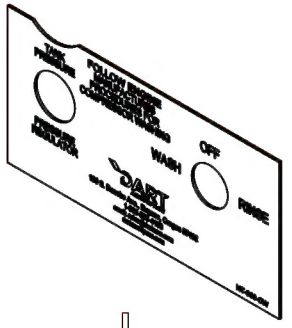
TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-65
REV	6
MAT'L 6061	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED D Weil HEAT TREAT FINISH SEE -61 WELDMENT SPEC USED ON MODEL
SCALE 2:1	DATE 9/25/2014

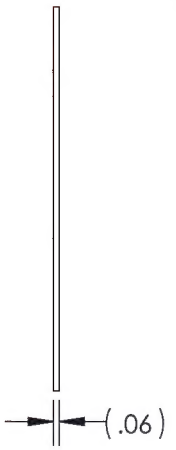
REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5A		CH'D PLACARD FROM HELI TECH TO DART AEROSPAC E.	9/5/13	RJC	RW
6	14-0161	**-67** ADDED EMAIL TO EMAIL ADDRESS.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION







NOTE:
USE PDF FILE.

(-67)

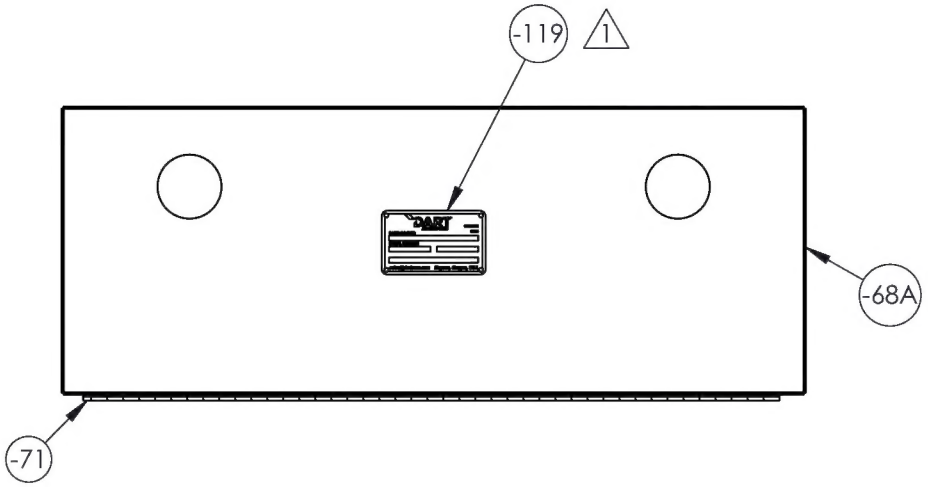
CONTROL PANEL PLAQUE

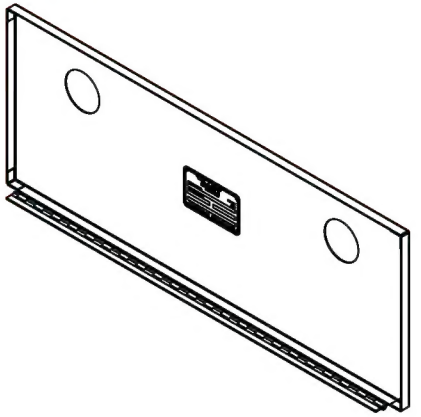
DART AEROSPACE

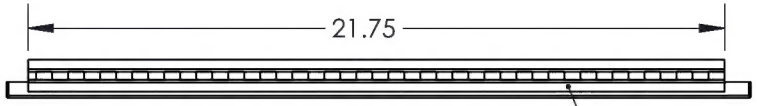
TITLE: ENGINE WASHER	
DWG NO.: HT-300-CW-67	REV: 6
MAT'L: PLASTIC	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED: D Weil HEAT TREAT: FINISH: SPEC: USED ON MODEL:
SCALE: 1:2	DATE: 9/26/2014

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

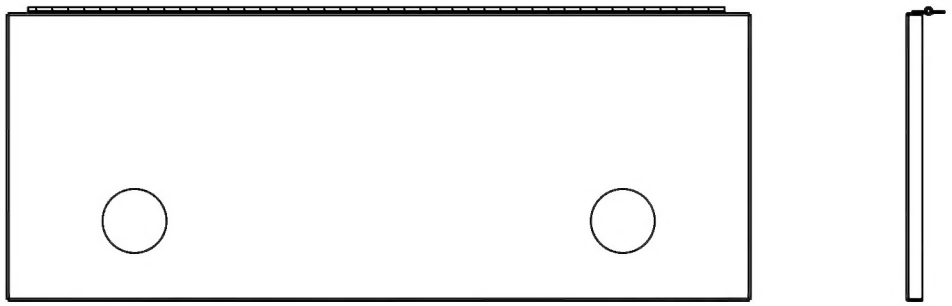
SEE ATTACHED DEVIATION







SPOT WELD -71 HINGE TO THIS SIDE 7X MATCHING OPPOSING SCREW HOLES WITH HINGE FACING OUT



(-68)

LID ASSEMBLY

NOTE:

1. ENGRAVE -119 WITH T/N, S/N, SERIES 300 ENGINE WASH SYSTEM.

DART AEROSPACE

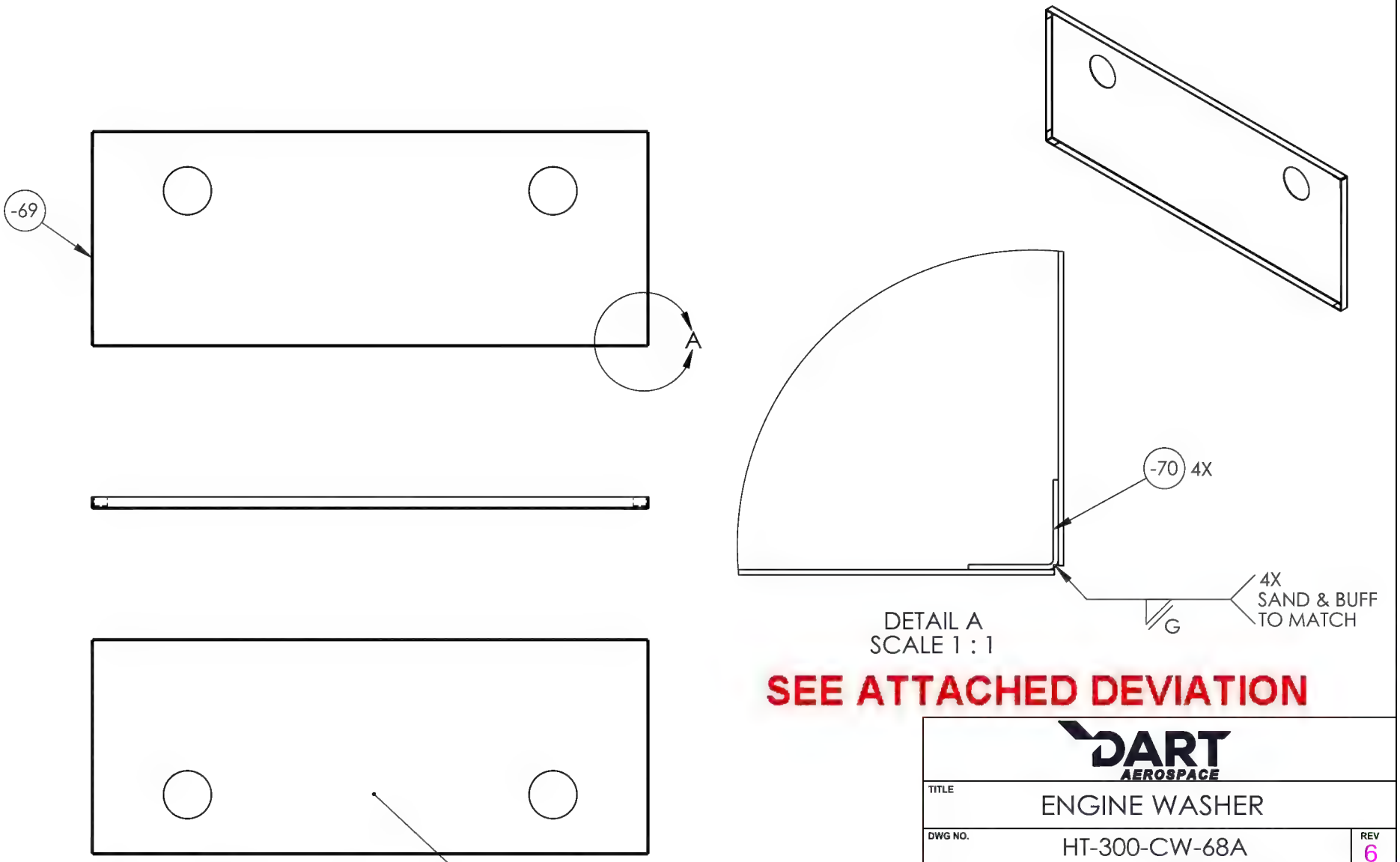
TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-68
REV	6
MAT'L	
DRAWN BY:	CLOUGH
APPROVED	D Weil
HEAT TREAT	
FINISH	
SPEC	
USED ON MODEL	
SCALE	1:6
DATE	9/26/2014
SHEET	10 OF 29

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1	14-0161	**-68A** ADDED LID WELDMENT DWG.	10/27/2014	RJC	JAG



DETAIL A
SCALE 1 : 1

SEE ATTACHED DEVIATION

VINYL COAT TOP SURFACE FOR PROTECTION
IF POSSIBLE NO DIE MARKS, DENTS, OR SCRATCHES
PERMITTED ON TOP SURFACE

-68A

LID WELDMENT

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO. HT-300-CW-68A | REV 6

MAT'L

DRAWN BY: CLOUGH

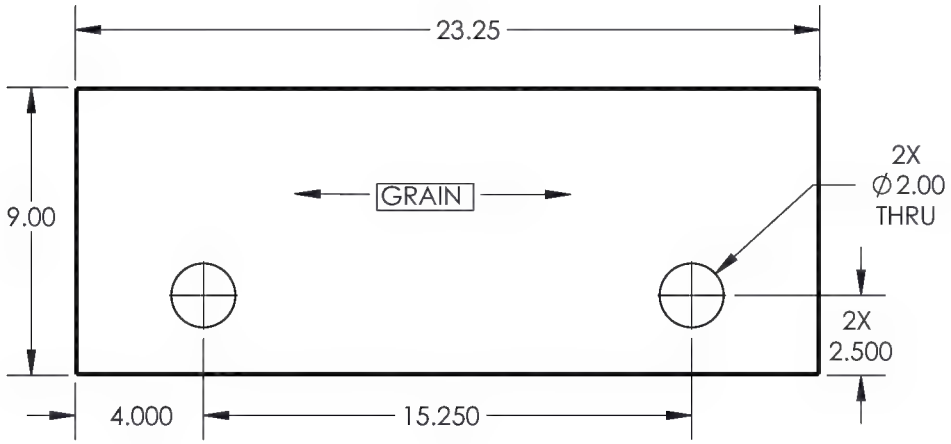
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

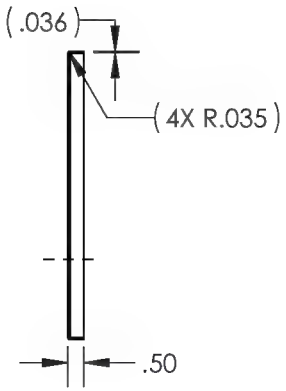
APPROVED D Weil
HEAT TREAT
FINISH
SPEC
USED ON MODEL

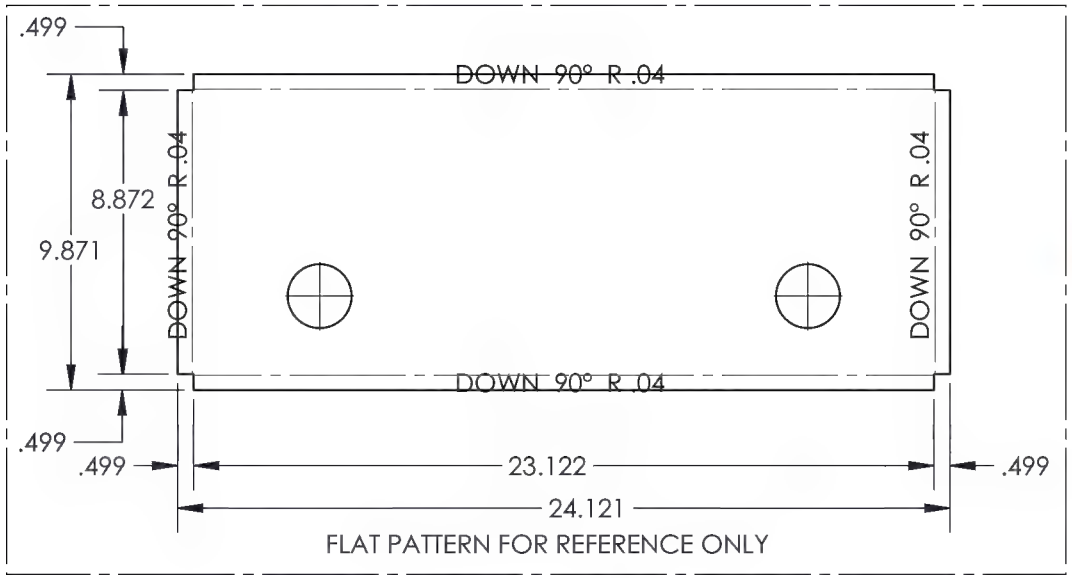
SCALE 1:6 | DATE 10/21/2014 | SHEET 11 OF 29

REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		LID LENGTHENED BY 1/16 TO ALLOW FOR ADEQUATE CLEARANCE .	3/5/02		
6	14-0161	**-69** CH'D DIM WAS .034 IS .036.	10/27/2014	RJC	JAG







SEE ATTACHED DEVIATION

(-69)

LID

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO. HT-300-CW-69 | REV 6

MAT'L BRUSHED S.S. 304-4B | DRAWN BY: CLOUGH

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ± .5°
.X ± .1

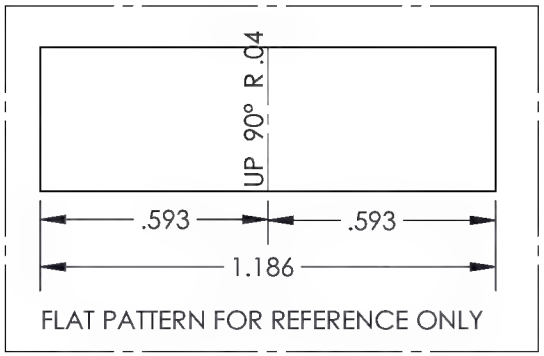
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

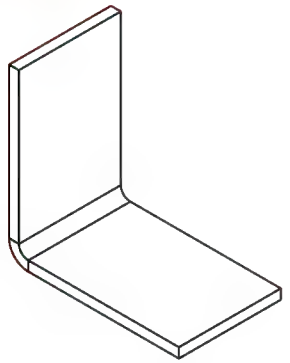
APPROVED D Weil
HEAT TREAT
FINISH
SPEC
USED ON MODEL

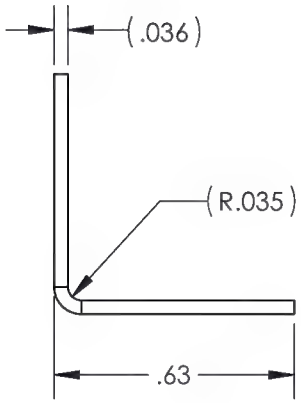
SCALE 1:6 | DATE 9/26/2014 | SHEET 12 OF 29

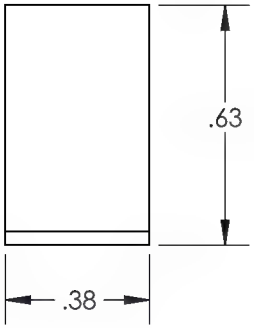
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-70** CH'D DIM WAS .034 IS .036.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION









(-70)

CORNER CLIP

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO. HT-300-CW-70 REV 6

MAT'L BRUSHED S.S. 304-4B

DRAWN BY: CLOUGH

APPROVED: D Weil

HEAT TREAT

FINISH

SPEC

USED ON MODEL

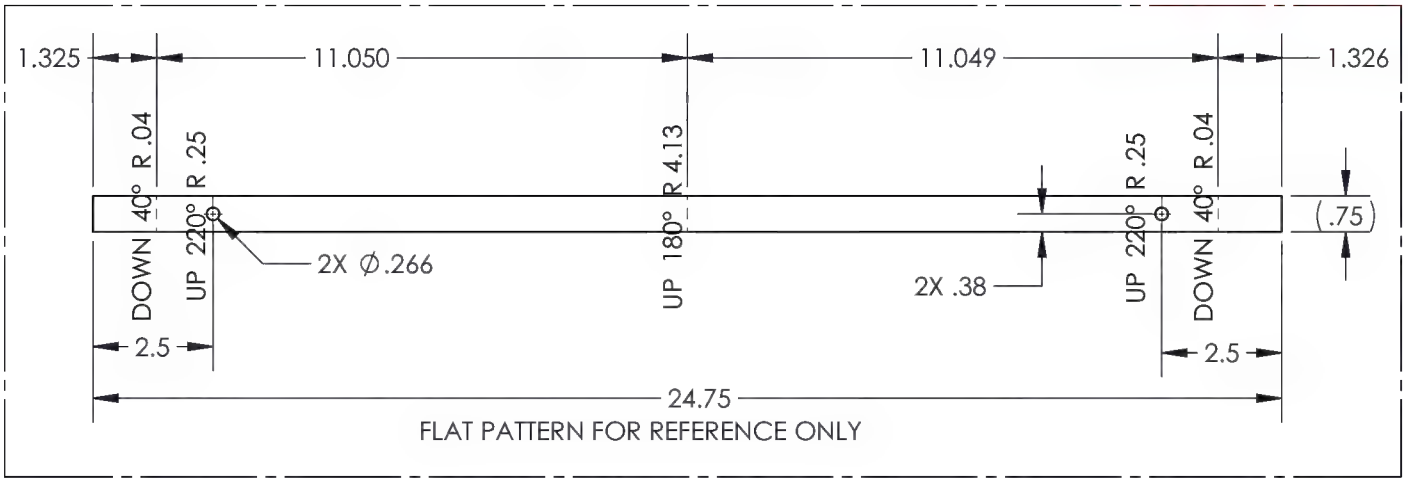
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±.5°
.X ± .1

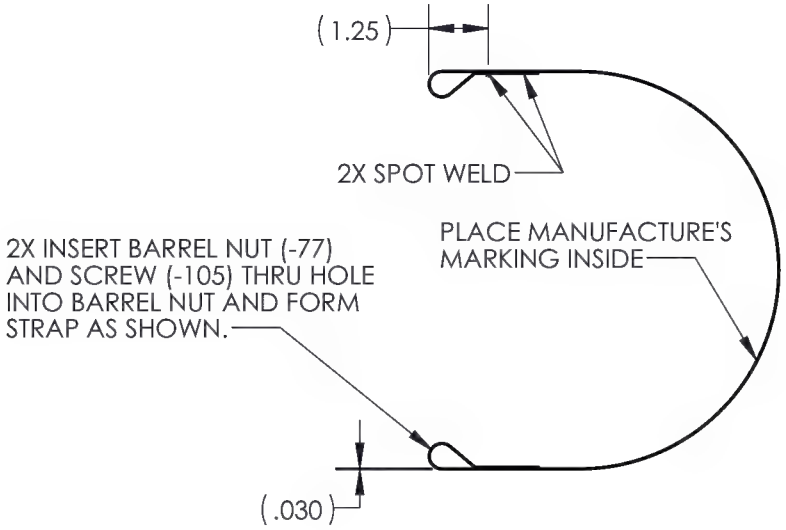
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

SCALE 2:1 DATE 9/26/2014 SHEET 13 OF 29

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

SEE ATTACHED DEVIATION





(-73)

TANK STRAP

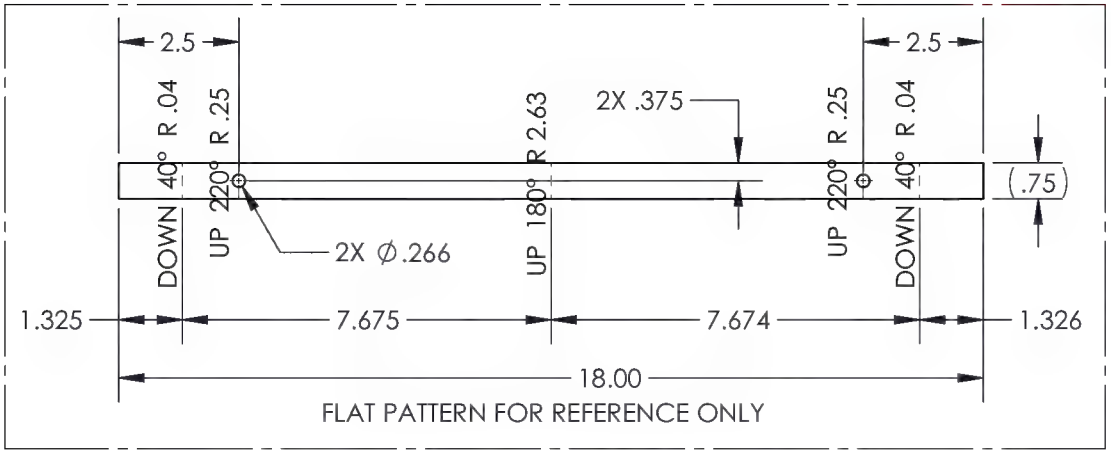
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-73
REV	6
MAT'L S.S	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .010 FRACTIONS ± 1/8 .XX ± .03 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED D Weil HEAT TREAT FINISH SPEC USED ON MODEL
SCALE 1:4	DATE 10/23/2014
SHEET 14 OF 29	

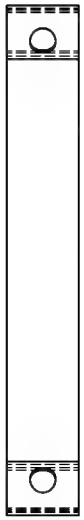
REVISIONS

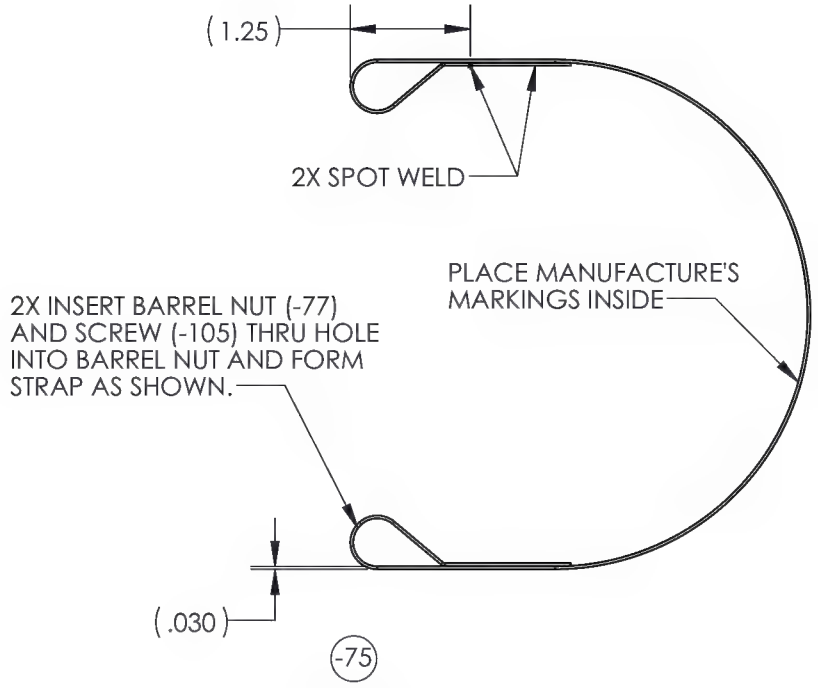
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-75** CH'D DESCRIPTION WAS CYLINDER STRAPPING IS CO2 CYLINDER STRAP.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION



FLAT PATTERN FOR REFERENCE ONLY





CO2 CYLINDER STRAP

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO.: HT-300-CW-75 | REV: 6

MAT'L: S.S | DRAWN BY: CLOUGH | APPROVED: D Weil

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±.5°
.X ± .1

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

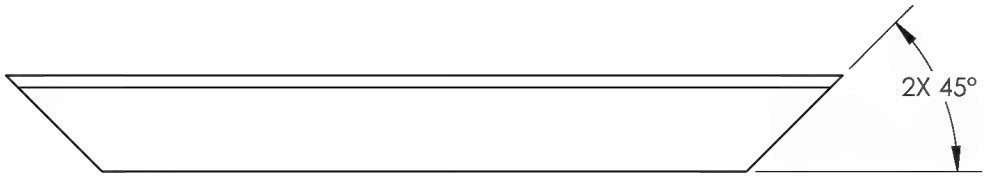
HEAT TREAT | FINISH | SPEC | USED ON MODEL

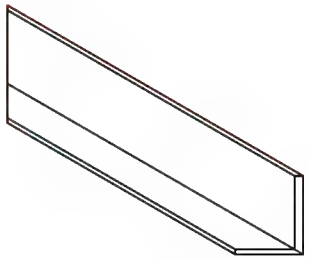
SCALE: 1:2 | DATE: 10/23/2014 | SHEET 15 OF 29

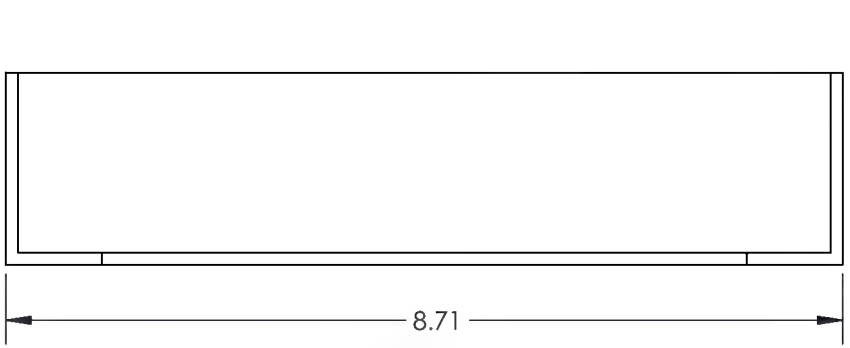
REVISIONS

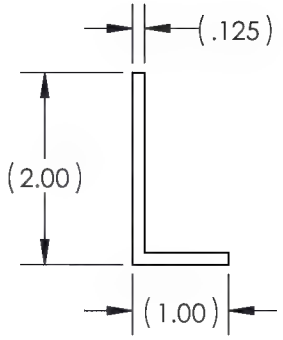
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5		**-81** CH'D HANDLE NOTE FROM 1.870 TO 1.75 MUST MATCH HANDLES -101. CH'D HOLE LOCATIONS FROM .43 TO .375.	2/7/13	RJC	GE
6	14-0161	**-81** REMOVED Ø.234 HOLES AND MOVED TO -61 CH'D HOLE DIA. TO .221. MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION









(-81)

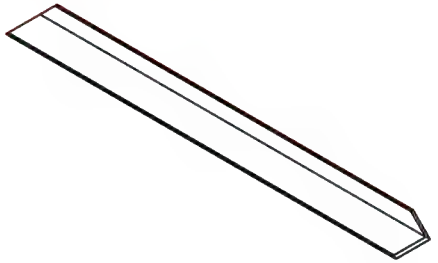
TOP SIDE RAILS

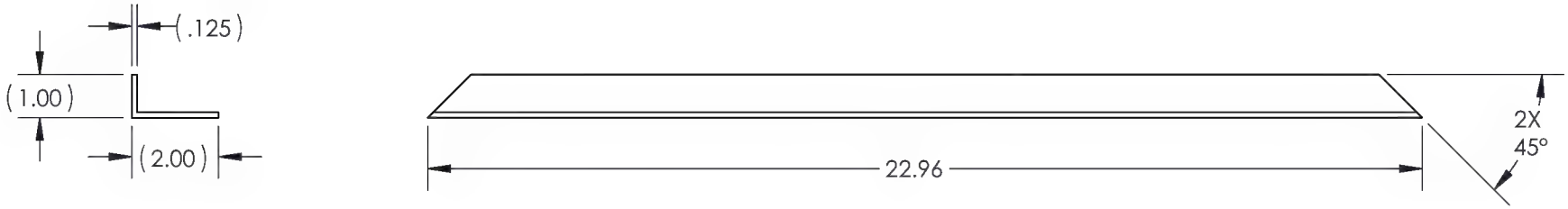
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-81
REV	6
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED D Weil HEAT TREAT FINISH SEE -61 WELDMENT SPEC USED ON MODEL
SCALE 1:2	DATE 9/26/2014

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-83** MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

SEE ATTACHED DEVIATION





(-83)

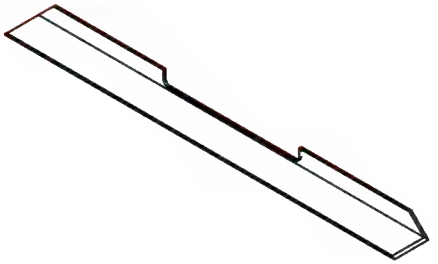
BACK TOP RAIL

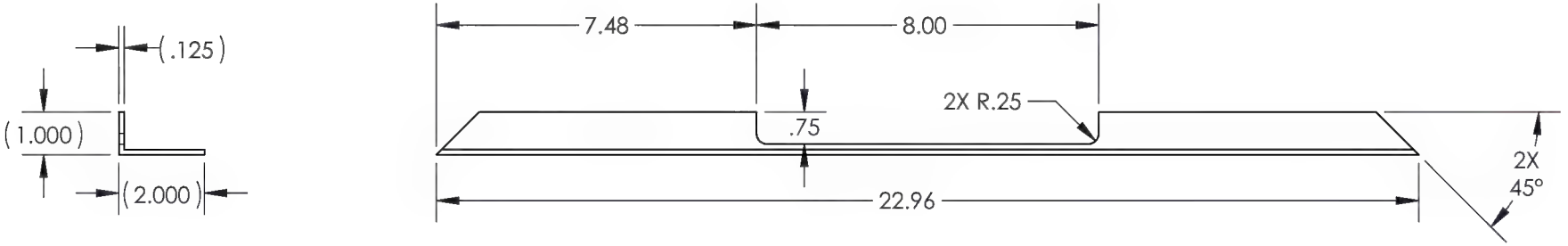
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-83
REV	6
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1	APPROVED D Weil
	HEAT TREAT
	FINISH SEE -61 WELDMENT
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:4	DATE 9/25/2014

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-85** MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

SEE ATTACHED DEVIATION





-85

FRONT TOP RAIL

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO.: HT-300-CW-85 | REV: 6

MAT'L: 6063 ARCH. | DRAWN BY: CLOUGH

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1

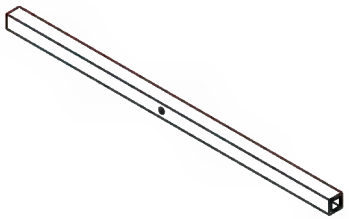
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

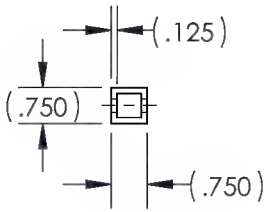
APPROVED: D Weil
HEAT TREAT:
FINISH: SEE -61 WELDMENT
SPEC:
USED ON MODEL

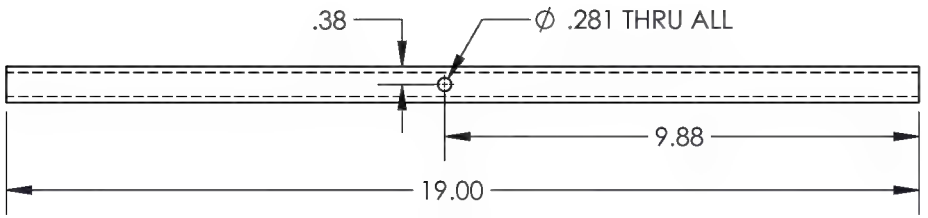
SCALE: 1:4 | DATE: 9/25/2014 | SHEET 18 OF 29

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-87** CH'D HOLE WAS Ø.312 IS .281. MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION







-87

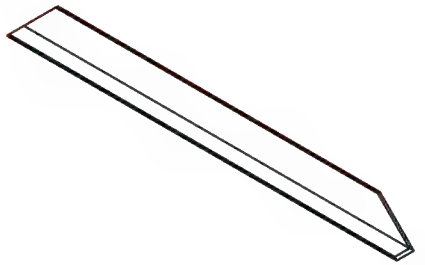
VERTICLE SUPPORTS

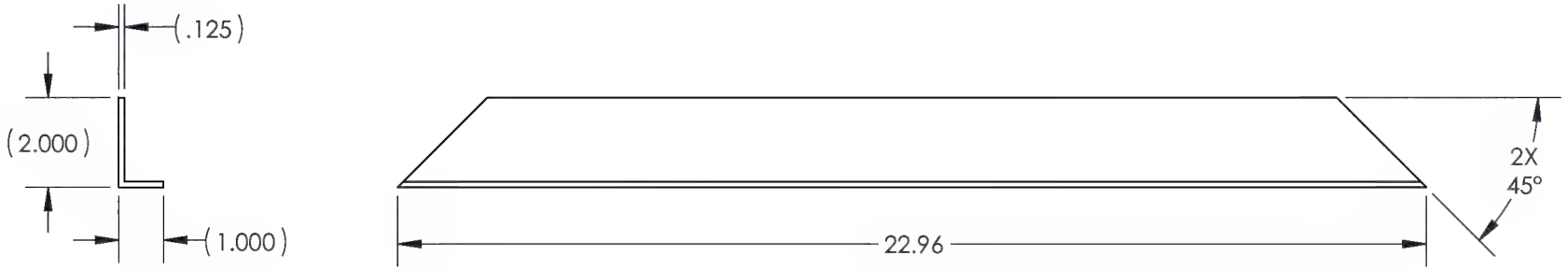
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-87
REV	6
MAT'L 6061 SQ. CORNER	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1	APPROVED D Weil
	HEAT TREAT
	FINISH SEE -61 WELDMENT
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:4	DATE 9/26/2014

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-89** MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

SEE ATTACHED DEVIATION





(-89)

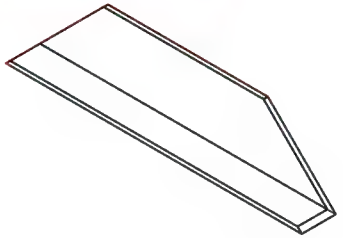
BOTTOM FRONT AND BACK RAILS

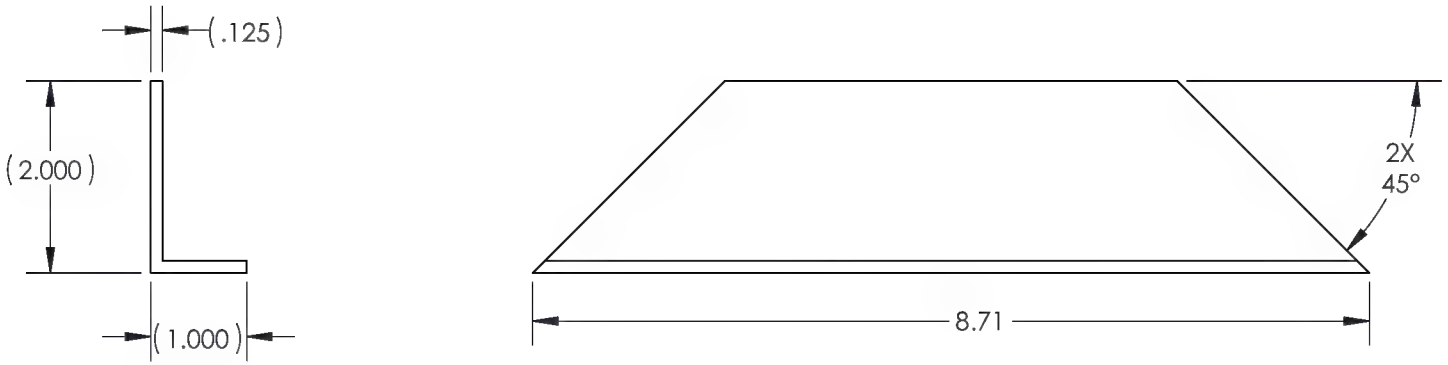
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-89
REV	6
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED D Weil HEAT TREAT FINISH SEE -61 WELDMENT SPEC USED ON MODEL
SCALE 1:4	DATE 9/26/2014
SHEET 20 OF 29	

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-91** MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

SEE ATTACHED DEVIATION





(-91)

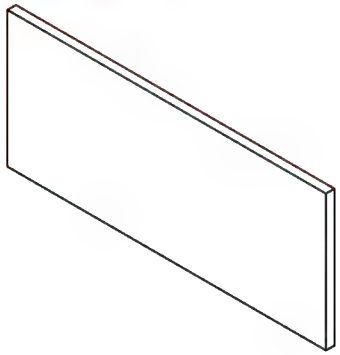
BOTTOM SIDE RAILS

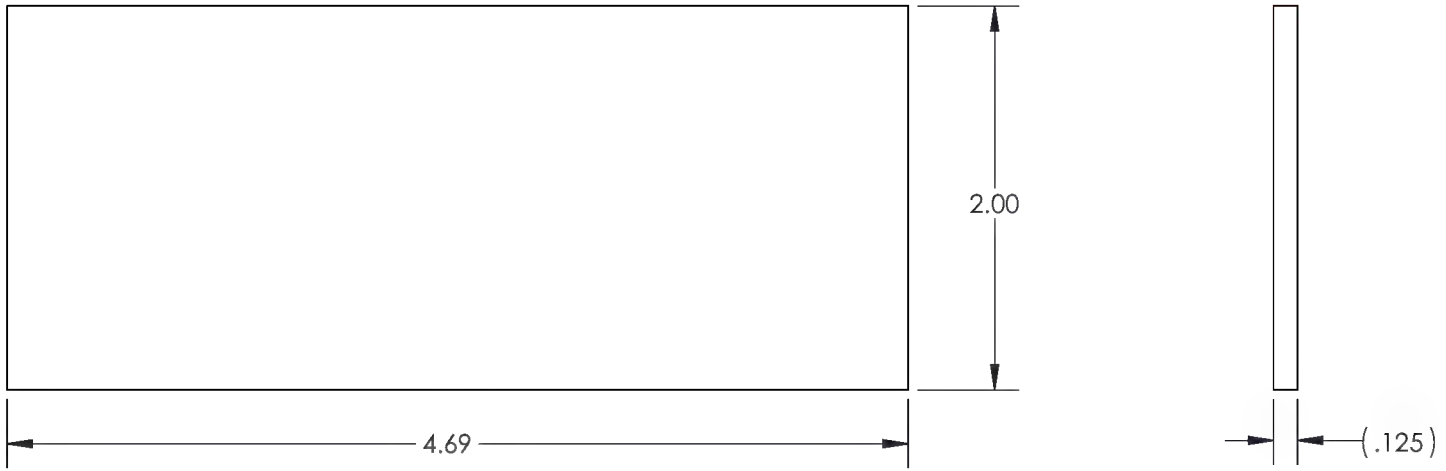
DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-91
REV	6
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED D Weil HEAT TREAT FINISH SEE -61 WELDMENT SPEC USED ON MODEL
SCALE 1:2	DATE 9/26/2014

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

SEE ATTACHED DEVIATION





-93

BOTTOM PLATES

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO. HT-300-CW-93 REV 6

MAT'L 6061

DRAWN BY: CLOUGH

APPROVED D Weil

HEAT TREAT

FINISH SEE -61 WELDMENT

SPEC

USED ON MODEL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005
.XX ± .01
.X ± .1
FRACTIONS ± 1/8
ANGLES ±.5°

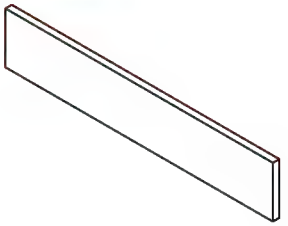
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

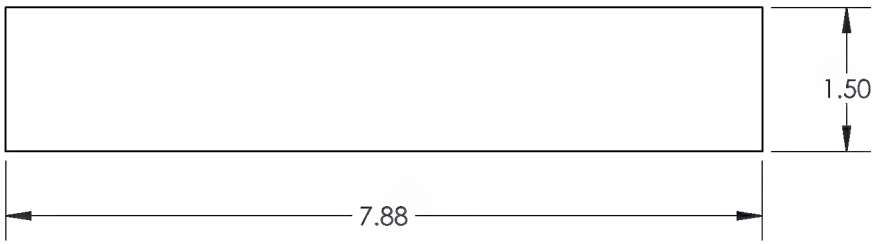
SCALE 1:1 DATE 9/26/2014 SHEET 22 OF 29

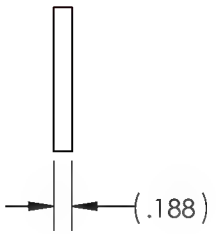
REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5		**-96** ADDED SIDE BAR W/O HOLES.	1/31/13	RJC	SE
6	14-0161	**-96** CORRECTED BOM QUANTITY WAS 2 IS 4, PER REV 5.	10/27/14	RJC	JAG

SEE ATTACHED DEVIATION







(-96)

SIDE BARS

DART AEROSPACE

TITLE: ENGINE WASHERS

DWG NO. HT-300-CW-96 | REV 6

MAT'L 6061 | DRAWN BY: CLOUGH

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

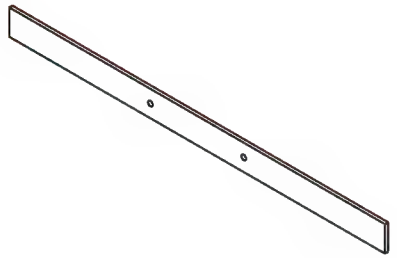
APPROVED D Weil
HEAT TREAT
FINISH SEE -61 WELDMENT
SPEC
USED ON MODEL

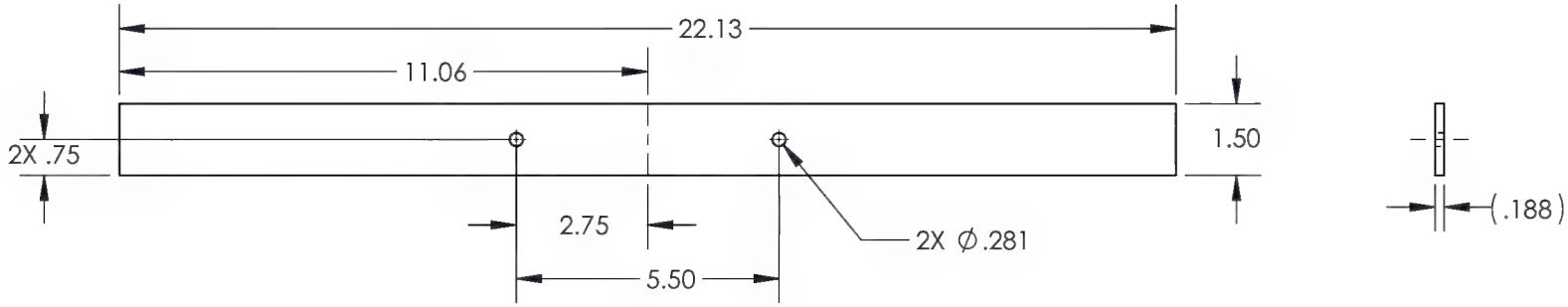
SCALE 1:2 | DATE 9/26/2014 | SHEET 23 OF 29

REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	**-99** CH'D HOLE WAS 2X Ø.312 IS 2X Ø.281.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION





-99

BACK BAR

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO. HT-300-CW-99 | REV 6

MAT'L 6061 | DRAWN BY: CLOUGH

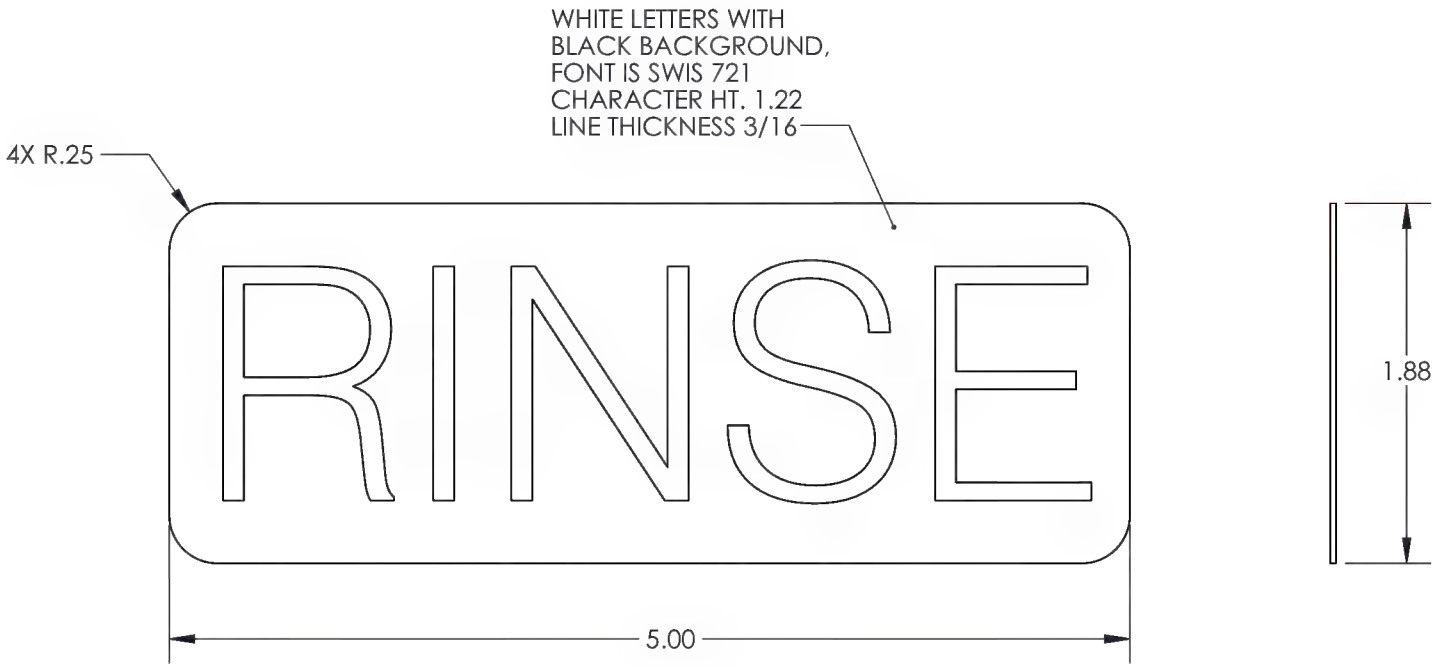
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

APPROVED: D Weil
HEAT TREAT:
FINISH: SEE -61 WELDMENT
SPEC:
USED ON MODEL

SCALE 1:4 | DATE 9/26/2014 | SHEET 24 OF 29

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
3		ADDED RINSE LABEL DWG.	12/27/07	WP	RW

SEE ATTACHED DEVIATION



-121

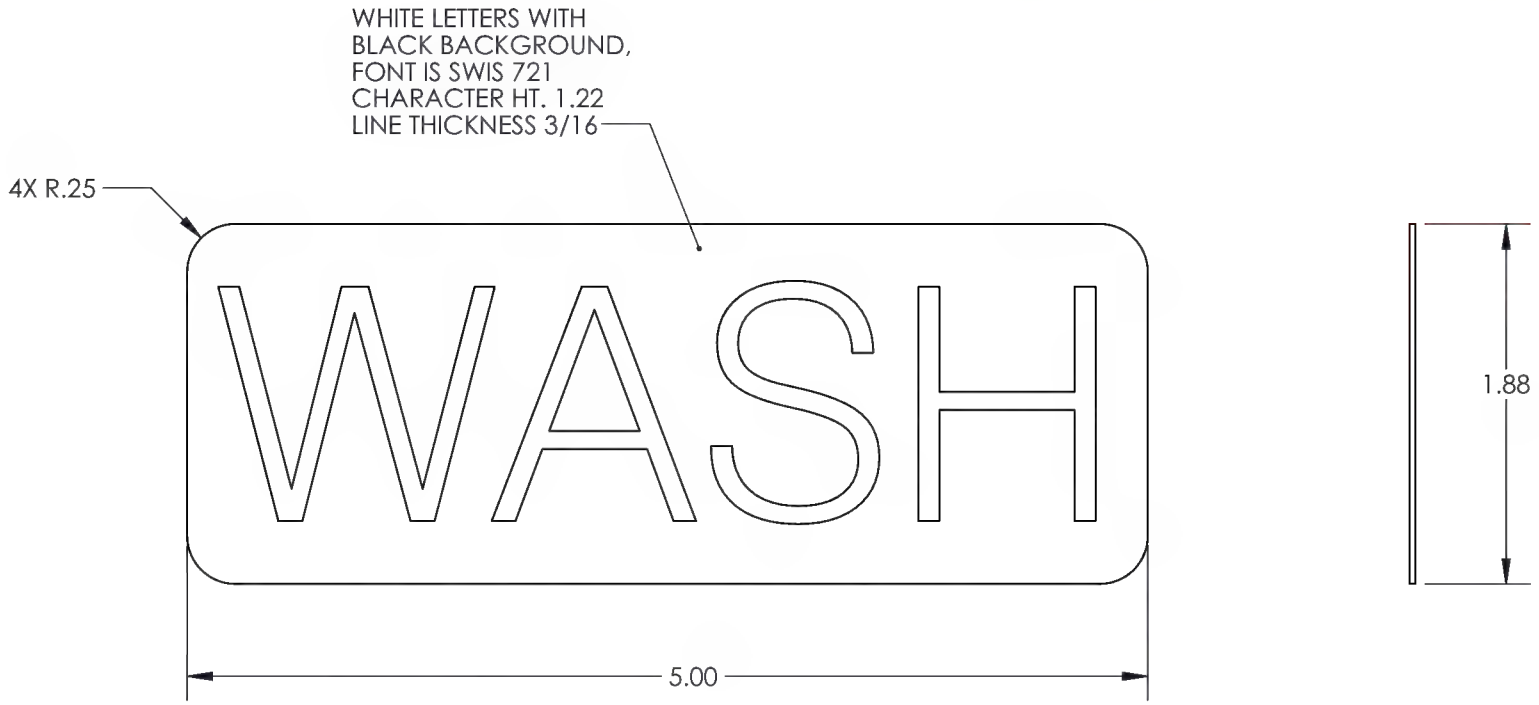
RINSE LABEL

DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW-121
REV	6
MAT'L PLASTIC	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ±.5° .X ± .1 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	APPROVED D Weil HEAT TREAT FINISH SPEC USED ON MODEL
SCALE 1:1	DATE 9/29/2014

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
3		ADDED WASH LABEL DWG.	12/27/07	WP	RW

SEE ATTACHED DEVIATION



-123

WASH LABEL

DART AEROSPACE

TITLE: ENGINE WASHER

DWG NO. HT-300-CW-123 REV 6

MAT'L PLASTIC

DRAWN BY: CLOUGH

APPROVED D Weil

HEAT TREAT

FINISH

SPEC

USED ON MODEL

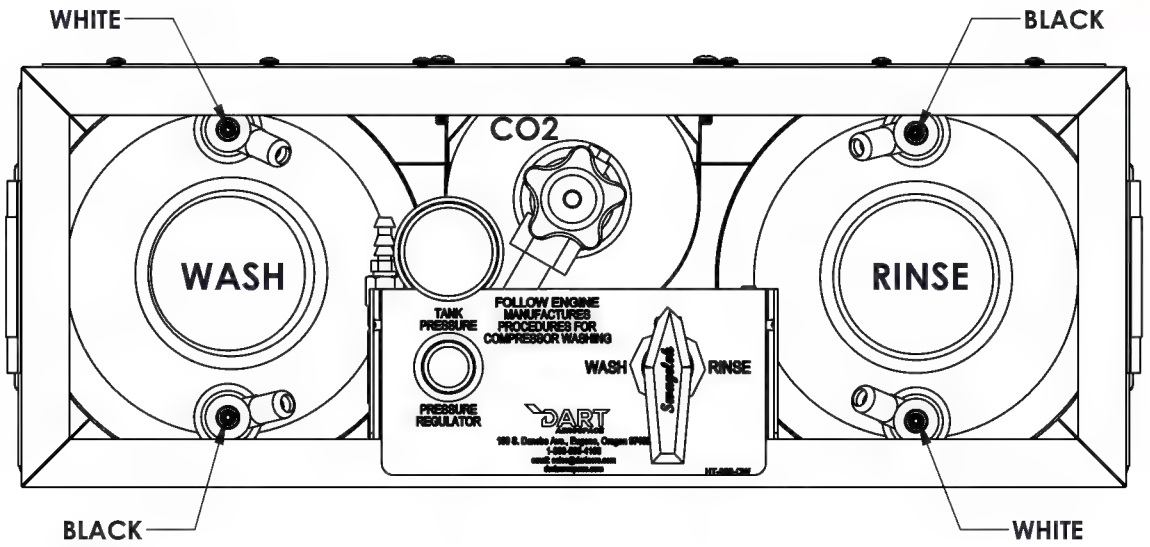
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005
.XX ± .01
.X ± .1
FRACTIONS ± 1/8
ANGLES ±.5°

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

SCALE 1:1 DATE 9/29/2014 SHEET 26 OF 29

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

SEE ATTACHED DEVIATION



TESTING PROCEDURES:

1. PLACE OPERATING HANDLE IN THE OFF POSTION.
2. CHECK TANKS FOR PROPER TUBE INSTALLATION AND REMOVE ANY DEBRIS.
3. REGULATE SHOP AIR TO 75 PSI.
4. WITH TANKS OPEN BLOW AIR THROUGH LINES TO PURGE.
5. REPLACE TANK LIDS.
6. SET REGULATOR TO 75 PSI AND CHARGE SYSTEM.
7. DICONNECT SHOP AIR AND BLEED ALL PRESSURE FROM WASH TANK THEN VERIFY RINSE TANK IS STILL PRESSURIZED. THIS TEST CHECKS VALVE OPERATION.
8. REPEAT #5 & & #6 ABOVE FOR OTHER TANK.
9. COMPLETLY BLEED SYSTEM AND PUT A QUART OF WATER IN EACH TANK.
10. CHARGE SYSTEM WITH SHOP AIR.
11. MOVE OPERATING HANDLE TO WASH POSITION, LOOSEN SHIPPING PLUG IN END OF OUTPUT HOSE TO BLEED OFF AIR IN LINE, TIGHTEN PLUG WHEN WATER COMES OUT.
12. CHECK FOR LEAKS AT ALL FITTINGS.
13. REPEAT #11 & # 12 FOR RINSE POSITION.
14. MOVE OPERATING HANDLE TO OFF POSITION, REMOVE SHIPPING PLUG FROM OUTPUT HOSE.
15. BLOW WATER OUT OF EACH TANK.
16. AGAIN SELECT OFF POSTION, SET REGULATOR BELOW 30 PSI.
17. CLEAN UP WASH KIT AND DRY OUT TANKS.
18. APPLY DECALS AS REQUIRED.
19. LEAVE TANK VENTS OPEN FOR SHIPPING.
20. BOX FOR SHIIPING.

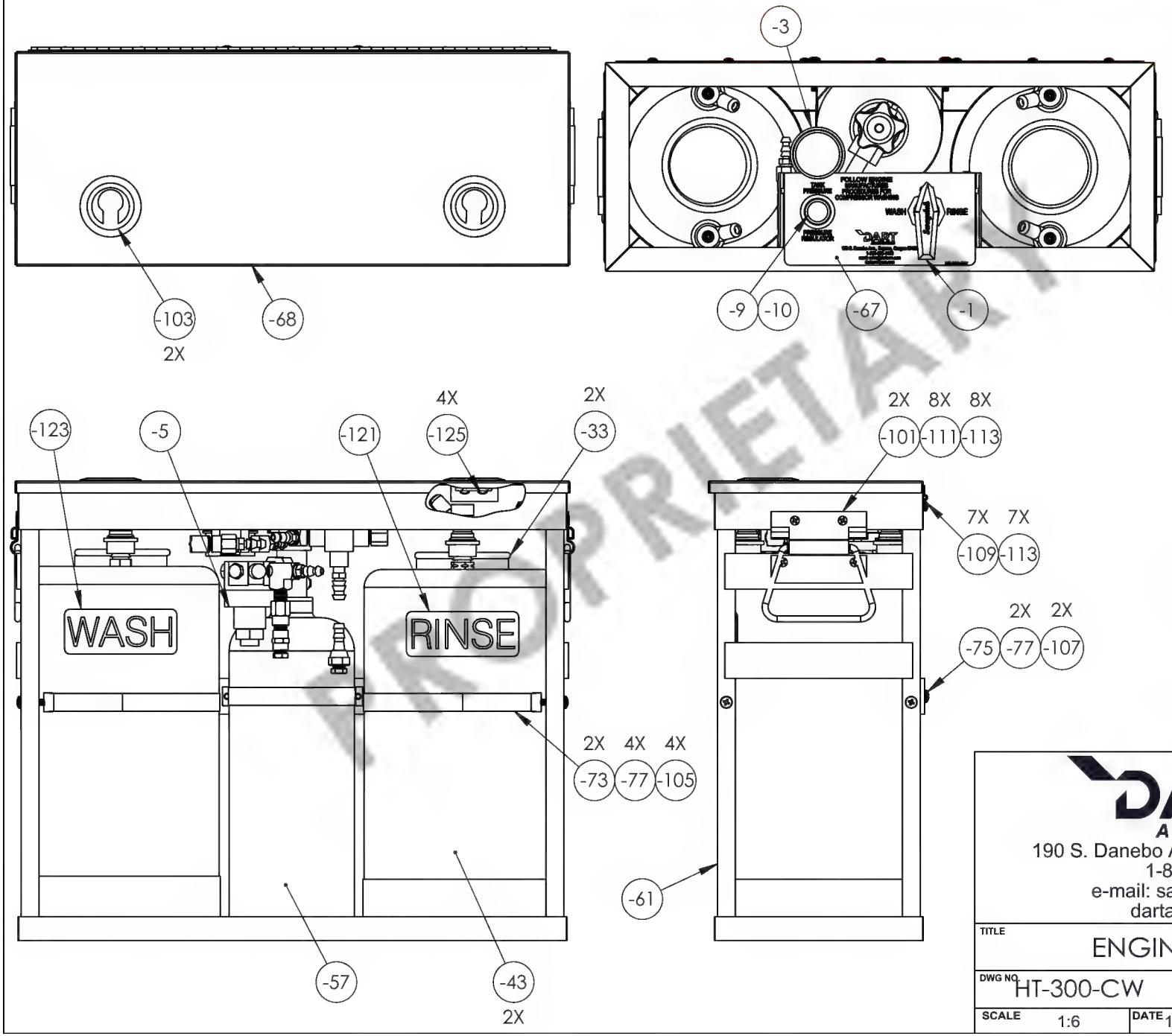
NOTE:
DO NOT CHARGE CO2 TANK!
CO2 TANK MAY NOT BE SHIPPED BY AIR IF IT HAS EVER BEEN CHARGED.

DART AEROSPACE

TITLE	ENGINE WASHER
DWG NO.	HT-300-CW
REV	6
MAT'L	
DRAWN BY:	CLOUGH
APPROVED	D Weil
HEAT TREAT	
FINISH	
SPEC	
USED ON MODEL	
SCALE	1:4
DATE	10/15/2014
SHEET	27 OF 29

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING

SEE ATTACHED DEVIATION



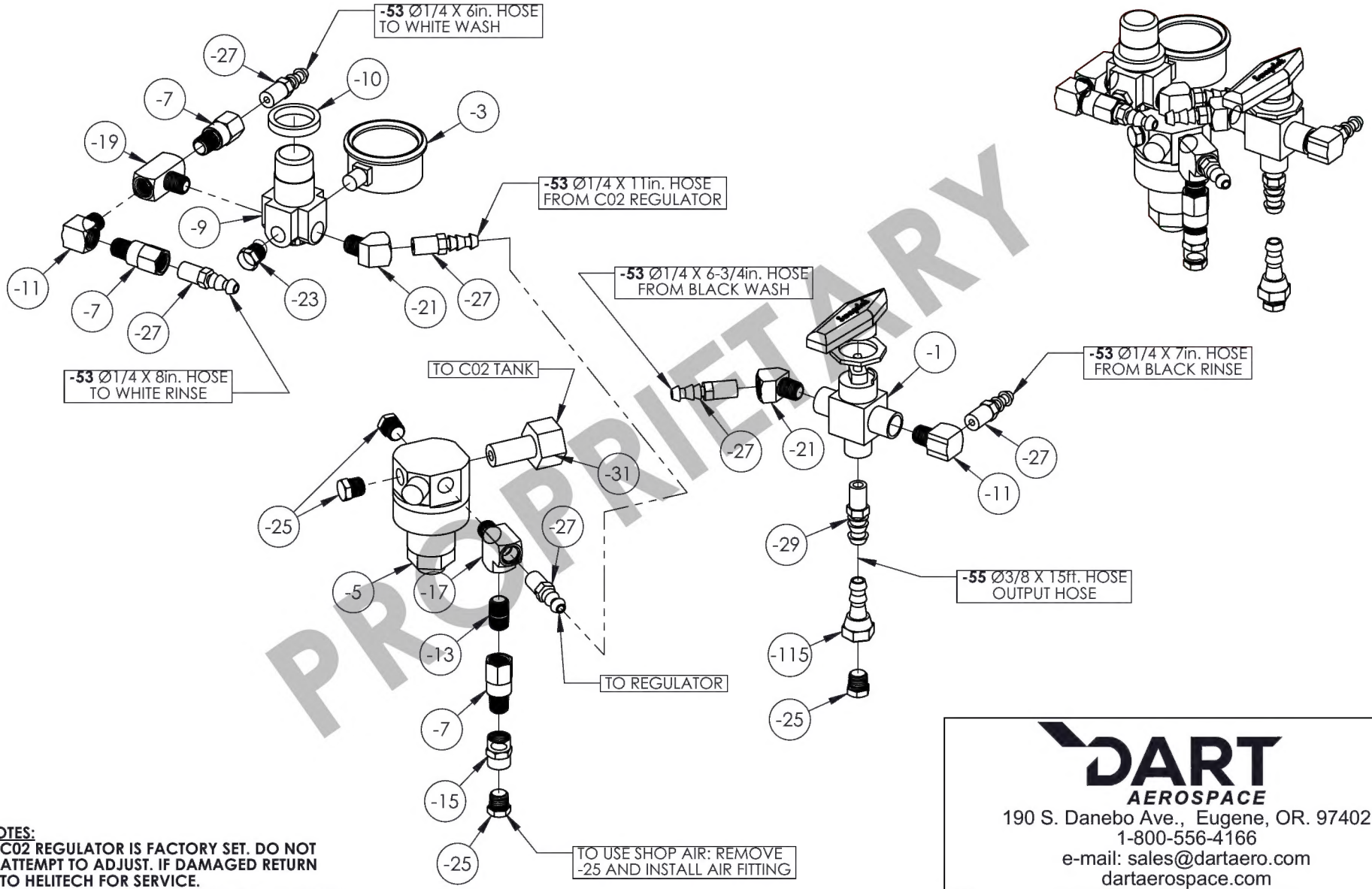
HT-300-CW BILL OF MATERIALS		
-1	1	BALL VALVE
-3	1	PRESSURE GUAGE
-5	1	GAS CYLINDER REGULATOR
-7	3	CHECK VALVE
-9	1	REGULATOR
-10	1	RING
-11	2	90° ELBOW
-13	1	CLOSE NIPPLE
-15	1	LIGHT COUPLING
-17	1	RUN TEE
-19	1	BRANCH TEE
-21	2	45° ELBOW
-23	1	PLUG
-25	4	PLUG
-27	6	PUSH LOCK FITTINGS
-29	1	PUSH LOCK FITTING
-31	1	CO2 INLET NIPPLE
-33	2	TANK CAP O-RINGS
-43	2	TANK W/FITTINGS
-45	2	WHITE QUICK DISCONNECT
-47	2	BLACK QUICK DISCONNECT
-53	1	Ø1/4 I.D. X 3-1/2 ft HOSE
-55	1	Ø3/8 I.D. X 15 ft HOSE
-57	1	CO2 TANK #5 EMPTY
-61	1	WELDED FRAME ASSY
-67	1	CONTROL PANEL PLAQUE
-68	1	LID ASSY
-73	2	TANK STRAP
-75	1	C02 CYLINDER STRAP
-77	6	BARREL NUTS
-101	2	CHEST HANDLES
-103	2	TOP PULL LATCH
-105	4	PAN HEAD SCREWS
-107	2	PAN HEAD SCREWS
-109	7	PAN HEAD SCREWS
-111	8	FLAT HEAD SCREWS
-113	15	NYLON LOCK NUTS
-115	1	HOSE FITTING
-119	1	DART PLACARD
-121	1	RINSE LABEL
-123	1	WASH LABEL
-125	4	PAN HEAD SCREWS

DART AEROSPACE
190 S. Danebo Ave., Eugene, OR. 97402
1-800-556-4166
e-mail: sales@dartaero.com
dartaerospace.com

TITLE: ENGINE WASHER

DWG NO.	REV	
HT-300-CW	6	CUSTOMER 1 OF 2
SCALE 1:6	DATE 10/15/2014	SHEET 28 OF 29

SEE ATTACHED DEVIATION



NOTES:

1. **C02 REGULATOR IS FACTORY SET. DO NOT ATTEMPT TO ADJUST. IF DAMAGED RETURN TO HELITECH FOR SERVICE.**
2. TO FILL CO2 BOTTLE, DISCONNECT -31 FROM TANK. LOOSEN TANK CLAMP AND TURN BOTTLE SO THAT THE NOZZLE FACES OUTWARD AND ATTACH ADAPTER. AFTER FILLING REVERSE PROCEDURE TO REATTACH TANK.

DART AEROSPACE
190 S. Danebo Ave., Eugene, OR. 97402
1-800-556-4166
e-mail: sales@dartaero.com
dartaerospace.com

TITLE: ENGINE WASHER			
DWG NO. HT-300-CW		REV 6	CUSTOMER 2 OF 2
SCALE 1:4	DATE 10/15/2014	SHEET	29 OF 29

Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

DART AEROSPACE

NCR No.

Route update only ☐

Job: _____

Part No. HT-300-CW REV. 6

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐

DEPARTMENT/PROCESS

Skid-tube	☐	Cross tube	☐	Eng. (Non-AW)	X	Engineering	☐
Machining	☐	Small Fab	☐	Prod. Eng. Coor.	☐	Water Jet	☐
Large Fab	☐	Finishing	☐	Rec/Store/Packaging	☐	Supplier	☐
						Quality	☐

Date :	Sequence #:	QTY Affected :	MRB (QSJ042)
			June 19, 2019

Description Work Order Deviation

-Part number substitues are recorded on sheet 2

PER MBB

Disposition

- The part numbers recorded on sheet 2 of this deviation are acceptable alternatives.

- The fit, form and function of the engine wash kit will be as originally intended.

Completed By

Lead hand / Supervisor

QC / QA Coordinator

Root Cause

Operator	☐
Manufacturing Process	☐
Equip/Tooling	☐
Handling/Presservation	☐
Material	☐
Product Improvement	X
Process Improvement	☐
Human Factors	☐

FAULT CATEGORY

☐ Pressure/Forced	☐ Contamination	☐ Power Loss/Surge	☐ Positioned Wrong
☐ Bending	☐ Misaligned/off center	☐ Folio/Program	☐ Outside Tolerance
☐ Crushing	☐ BOM/Route	☐ Grain Direction	☐ Drawing
☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Finish
☐ Crimp/Kink/Ripple/Wave/Twist	☐ Incomplete/Unclear Instructions	☐ Wrong Stock Pulled	☐ Part Lost/Missing
☐ Marks/Chatter	☐ Drill Holes	☐ Out of Sequence	☐ Misread
☐ Mislabeled	☐ Fit/Function	☐ Off-set/Set-up	

Other/Details:

Item #	Description	McMaster Carr	Foxx Equipment	www.ontariobeerkegs.com	www.granger.com (or local supply)	www.acklandsgranger.com (or local supply)	www.southco.com
-1	3 way valve	46095K42					
-3	Gauge (0-100psi)	4089K61					
-5	CO2 Regulator		03G07126				
-7	M-F Check Valve	7768K26					
-9	Regulator (2-125 PSI)	41735K11					
-10	Ring (mounting ring for regulator)	41735K48					
-11	90 deg elbow	50785K43					
-13	1/4" M-M pipe nipple	4568K131					
-15	1/4" F-F pipe coupler	9151K62					
-17	1/4" Tee M-F-F	50785K222					
-19	1/4" Tee F-M-F	50785K322					
-21	1/4" 45 elbow	50785K82					
-23	1/4" plug	50785K221 or equiv					
-25	9/16-18 JIC Plug				2F569	DYE03CP6	
-27	1/4" NPT- 1/4" Barb	91465K91					
-29	1/4" NPT- 3/8" Barb	91465K92					
-31	CO2 Nipple			CGA 320 Nut & Nipple RH			
-33	n/a						
-35	oring	9464K12					
-37	oring	9464K13					
-39	oring	9464K24					
-41	oring	9464K18					
-43	3 gallon tank		15C07-121				
-45	conector for tank with 1/4 hose barb		07C07-138				
-47	conector for tank with 1/4 hose barb		07C07-139				
-49	Ferrule	54105K37	06E04-147				
-51	pick up tube for 3 gallon tank		15C07-201				
-53	1/4" hose (per foot)	5633K21					
-55	3/8" hose (per foot)	5633K23					
-57	CO2 Tank		01F05-103				
-59	oring	9464K44					
-67	placard (Dart supplied material)						
-71	hinge (or Essentra NSH-220)	1582A457					
-77	Barrel Nut	90835A210					
-101	Handle	1856A73					
-103	Latch (non locking)						M1-61
-115	Hose Fitting	53515K12					
-118	double sided tape	76665A89					
-119	placard (Dart supplied material)						

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. HT-300-CW & HT-500-CWA

NCR No.

DISPOSITION

Rework	☐
Scrap	☐
Use-as-is	☐
Suspected Unapproved	☐

AGAINST DEPARTMENT/PROCESS

Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐
Machining	☐	Small Fab	☐	Prod. Eng. Coor.	☐	Quality	☐
Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐
Large Fab	☐	Composite	☐	Supplier	☐		☐

Date :

Step #:

QTY Effective :

MRB (QSI042) Approval

MLee

April 11, 2018

Description Work Order Deviation

- Substitute ARROW R-162 Regulator with McMaster Carr 41735K11 Regulator (2-125 psi)

- Substitute PK-1611 Regulator Nut with McMaster Carr 41735K48 Mounting Ring Nut

Disposition

- This deviation is acceptable.

- The fit, form and function of the engine wash kit will be as originally intended.

Completed By

Lead hand / Supervisor Approval Verification

QC / QA Coordinator Approval

Root Cause

Environment	☐	☐	No Re-verfication
Design	☐	☐	Operator
Doc/Data	☐	☐	Offset/Setup
Equip/Tooling	☐	☐	Supplier
Handling/Pre	☐	☐	Training
Material	☐	☐	Use for Testing
Internal Transport	☐	☐	Poor Information
Tribal Knowledge	☐	☐	Rushing
LOA	☐	☐	Product Improvement
Substation	X	☐	Process Improvement
Past Expiry Date	☐	☐	Manufacturing Process
Misidentified	☐	☐	Past Due

FAULT CATEGORY

☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence

☐ OTHER :